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Research published scientific research aimed both economic development and clarification of the current economic phenomena and processes. As a result, conclusions and proposals offered by the authors address both academia - scientists, teachers, students - as well as decision makers. We emphasize the importance of scientific contributions, together with the clarity of concepts, methodologies and conclusions offered.

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PLENARY SECTION

CHALLENGES OF THE EURO AREA

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PhD. Valeriu-Ioan Franc[2]

Abstract:

Any attempt to follow a practical path for adopting euro, in the case of EU member state enjoying the waver in order to reach the stage fully complying with the Maastricht criteria, has to pay attention to the changing environment in many terms, which can influence a good preparation. In fact, in the case of Romania, the present time is not an easy one to follow the political engagement for adopting euro. We can consider that there exists a political decision backed with a quite consistent national support. There is plan for preparations consensual adopted by the representatives of the parties attending the works of the special National Commission dedicated to work out several important documents supposed to unify the efforts Romania being able to be approved as member state of Eurozone in 2024. In this presentation, we concentrate on the topics recalling some of the main challenges confronting Eurozone, considered important for the time being. The list of them is more extensive. In a study worked out in 2020 within the Institute of World Economy of Romanian Academy they should be treated appropriatly.

Keywords: *financial crisis, euro, Eurozone, challenges, EMU, EU budget, ECB.*

JEL classification: *G01, O52, E58, F15*

Introduction

Any political momentum of accession to the euro area by adopting the single currency needs always to be completed with analyses of the challenges of the euro area. At any moment, either of the preparation of the adoption of the euro or of the adoption itself, we need an assessment of the "environment" in continuous change - internally, of the Union and of the international one - in which Romania will continue to fulfil its political and economic commitments, assumed by its membership in the European Union (EU). An even closer proximity to the Economic and Monetary Union (EMU) implies a clearer and more direct convergence to the sustainable economic model, which can contribute to the normal functioning of the euro in the Community area. The adoption of the single currency does not exonerate a new member from the obligations of the states of the Union where the euro - the euro area - is already circulating, but, on the contrary, they must complement and strengthen them at the required quality level. As we currently have a political statement doubled by a national action plan for the preparation of the euro adoption by Romania in 2024, a relatively tight deadline, with what the euro area is currently facing is of particular interest. This is explained by the nature of the interactions of the Eurozone challenges with the very preparation of Romania to move to the single currency.

As a general remark, we believe that many of the challenges of the Eurozone are related to the design of the euro. It is recognized as incomplete by his parent (Otmar Issing), but with the hint that this design was expected to be corrected after the initial period of application and with the recognition that the benefits of the single currency had to be strengthened by the fiscal pillar. Its shortages became known pertinently together with the impact of the financial crisis, but even this recognition did not make the road to a solution of the type of a fiscal union in the euro area to be

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less difficult and conflicting and with a solution far too simplified. About the challenge of the euro design, a separate analysis has to be done, as the attention being focused on the challenges that affect from inside and outside the euro area economy, of which we will stop at only three of them.

The aftermath of the financial crisis

After more than 10 years of searching for solutions and explanations, the consequences of the financial crisis continue to be a challenge with deep echoes and prolonged effects. According to many analysts, they are determined by the way, in which the sanitation of the crisis has been attempted and overcome, more under the pressure of urgency and not of a vision adapted to the new realities imposed by globalization. These include the speed of contamination through international financial links, an area in which the escalation of risks in favour of the largest and fastest profits has exceeded any capacity for prevention. As a result, the recovery from the financial crisis has shown that the traditional theoretical kit applied in such a situation is surpassed by the scale and depth of the crisis manifested. Global financial integration was lacking uniform rules and behaviours and many innovations in the area were forced to the limits of a perpetual mobile: the money is reproducing by itself!

The orthodox or conservative economists, subjugated by the old theoretical models, have argued that fiscal austerity could reinvigorate the lost confidence in the financial system and ensure a robust economic recovery. But, after a decade of observing the economic growth at EU level and in particular the economic growth at the euro area level, following financial market fractures, serious questions have arisen regarding the quality and continuity of the recovery in order to be transformed into robust growth. The recovery was hesitant and its fragility could not reach the expected potential, the latter being affected and sensitized by the very own vulnerabilities of an anemic economic growth. The economic crisis has sharpened the "saw teeth" seen in any graphical representation of the economic cycle. The steep slope of the economic decline revealed the lack of commitment for sufficient resources for recovery.

Attempts to explain "the disappointment" become more complicated with the spectre of the risk of a new recession determined by "aggressive mercantilism of the US government" (Weeks, J., 2019, in its "Shadow of recession deepens over Eurozone"), which, among others, had as a result the contraction of the German economy, the leader of the undisputed economic power (for how long time?) of the European Union. Weeks, a contributing analyst at Social Europe magazine, comparing incomplete recoveries with repeated failures in the resumption of the euro area's economic growth in the post-crisis period, tells us that, beyond short-term explanations, one should find the underlying causality of a decade of developments with such of features. The underlying cause, shared by more and more economists, is fiscal austerity understood as a strong constraint of public spending, with the question on which this constraint was actually applied.

Weeks also, in his book "The Debt Delusion", mentions that the EU has assumed a specific, imposed and forced meaning of fiscal austerities, that of balancing total spending with total revenues without net borrowing. This mathematical understanding eliminated the anti-cyclical role of fiscal policy, giving the public expenditures the endogenous character of growth as they force to buy the domestic output exclusively. The endogenization of expenditure explains that a public budget not only does not contribute to economic growth, but also reduces it, if the spending to stimulate the economy from its own budgetary resources was restricted precisely because of strangling the investments needed for a larger base of public revenues. Adding to this, the ECB's exclusive mandate for price stability (inflation target near 2% and not beyond this level) and the freedom of the market to determine the euro exchange rate, both looked as macroeconomic policy issues, have practically deprived the governments of tools that can support and strengthen economic growth by their contribution.

It is possible, according to the IMF's opinion, that the EU may have applied an "expansive austerity" with ideological and / or historical connotations imposed by many countries on others (Germany, for example, followed by Italy and Spain, has passed strict rules in constitution as to the budget deficit). After good years since the financial crisis of 2008 erupted, another problem arises from the type of measurements of the economic growth based on the austerity with the meaning to combat macroeconomic imbalances and debts. Thus, the statistical data released by Eurostat on

quarterly gross domestic product (GDP) indices, for the period 2007-2019 (Q1), reveal a more visible divergence between the impact of the austerity program in EU countries from the euro area and those outside the euro area (Weeks). The indices of the weighted average GDP for the euro area show a good overlap with the indices of the weighted average GDP for the non-euro area during the period 2007 (Q1) - 2011 (Q2), after which, depending on the austerity programs, less systemic in non-euro countries, the two curves of the cumulative growth are departing. From 2012 to 2019 (Q1), the cumulative economic growth of euro area countries was 9.7% (equivalent to 1% per year), while the same growth in non-euro countries was of 20% (equivalent to 2.3% annually).

The figures show two things: a) it confirms the hypothesis of depressive economic growth caused by austerity; b) the fact that the price stability within the target of 2% annual rate of inflation has become problematic in managing the single currency. Weeks is concluding that fiscal expansion in the Eurozone countries could have been a more appropriate solution to growth than austerity and, in the absence of resetting the fiscal rules, the spectre of a Eurozone crisis cannot be too far. Economists such as Zoltan Darvas, Xavier Ragot, Philip Martin and others tell us that the simple rules of a coherent common fiscal policy prove better for the euro area and this approach should become a priority if euro design correction is really desired. They state the current fiscal framework suffers from three problems: complexity, which makes rules difficult to be internalized by policy makers; they are pro-cyclical, which gives them a destabilizing potential; compliance is difficult, which makes them untrusted as effects.

Risk sharing

In 2010, at the Franco-German summit in Deuville, the euro area member states considered that they should not benefit, at first instance, of any aid the Union institutions can provide in managing public and private debt risk. The first measure recommended was the involvement and the responsibility of the private sector in assuming the economic and financial losses of their companies. That recommendation was aimed at avoiding the spread of the global financial crisis from one-member state to another, forgetting about the benefit of a risk sharing between those with private debt problems. A risk sharing "technology" should be based on some common stabilization resources in the euro area (named by analyst Marcello Minenna, a "mantra", see "The nationalization of risk in Eurozone", 2019), which is still an issue under unfinished debate between member states of the EU. A stabilization fund remains yet a problem even for Banking Union, with the impact of "risk segregation" at the level of the euro area member states. By "nationalizing" the risks within the euro area creates the impression that the same euro is measuring differently the debts in different euro area states. Or, the euro has no longer the same value for all those indebted. That consideration is the main cause of blocking the creation of euro bonds at the level of euro area. A formula of reaching a common denominator for the governmental obligations of the different member states of the EU, respective they use or not the single currency is a must in our opinion.

Risk sharing in the euro area has become, finally, a political battleground as risk segregation has both advantages and disadvantages in terms of competitiveness of the products and services created in the euro area due to the different financing costs (interest rates spread). Or, this puts in conflict the states with the larger debts (the peripheral ones) with those with the smaller ones (the Nordic ones), forgetting, leaving aside who benefited from the euro and who did not. The basic problem raised by Minenna is how to resist to an unequal competition when the costs of goods and services differ as a result of the financing costs to deliver them in the same currency - euro. Minenna studied the problem mentioned in the case of Italy compared to that of Germany (having years of significant trade surpluses), demonstrating a strong correlation between the spread of debt financing interest and Target 2 balance of payments transfers between the euro area countries through their central national bank accounts. It is known that the real spread is the excess yield (without inflation) between the government bonds of the euro area countries compared to those of German government. This differentiation can be eliminated (also in Marcello Minenna's opinion) by gradually shifting to medium and long-term sovereign risk sharing within the euro area. It is necessary reform some actions, closer to market rules, of some super-operational bodies / instruments of the Monetary Union, such as the European Stabilization Mechanism (ESM). It is desirable for the European Central Bank (ECB) to give up the "key" by which it currently

determines the level of bond purchases under its quantitative easing (QE) policy. Now, it is based on the relative size of economies and population. According to some opinions, it would be more useful to find a correlation between the real interest rates spread of public debt financing or the level of public debt in relation to national GDP.

The ECB's role and mandate

The meeting of European economic policy makers at the Business Forum of Anbrosetti, Italy (September 5-6, 2019) outlined the concerning perceptions. The slowdown in economic growth in the euro area is more than the prelude to a recession, but there are too much delayed fiscal measures to support the economy in spite of existing resources (fiscal spaces). The ECB will continue the quantitative easing policy, considered vital for the period ahead, but not sufficient to stimulate inflation at the level of price stability definition. In addition, Brexit, although perceived as a collateral factor for the euro area's underlying issues, blurs the overall economic outlook of the EU. The ECB's strategy, since Mario Draghi became president in 2012, consists in a single sentence, imposed by the time of the financial crisis: "Within its mandate, the ECB is ready to do whatever it takes to save the euro and this will be enough" (Draghi, 2012). Draghi's conviction for saving the euro has come to be real, but the limits and effects of the ECB's policy have shown the difficulty in freeing the euro area economy from deflationary pressures.

The mandate and role of the ECB are enshrined in strict rules, imposed by Germany, for the functioning of a currency half designed: real political and financial independence of the central bank and price stability, to which financial stability has been added as a side objective. While monetary policy is unique for the euro area, fiscal policy remains the responsibility of the governments of the euro area member states, and the so called euro zone budget at present, admitted by Germany at the insistence of France, is insignificant in size to make up for the lack of the euro's fiscal pillar. If it is to continue with the insistence of blocking fiscal transfers within the euro area, then what remain valid are the strong discipline and the individual contribution of the euro area countries to the economic stimulation through their own fiscal policies. Divergences still persist in a simple question: who is really willing to do it if it still enjoys of fiscal space and how much it wants to use it to make up for the lack of fiscal space of the others.

The moment of the "crisis" in the conduct of the ECB's single monetary policy is recalling the history of the euro. Philip Stephens reminds us of the euro support of former German Chancellor Helmut Kohl, who said that the single currency is an honest price for Germany's reunification and stabilization in Europe. The euro will mark the way for a European Germany and block the one of a Germanized Europe, the Financial Times quoted, which, at the same time, titled the fact that Germany has hided to people the uncomfortable truth about the role of the euro (FT opinion: "Germany hides the awkward truth about euro"). The reality is otherwise, that Germany has become the biggest beneficiary of European integration through democratic stability and the economic certainties ensured by larger European market endowed with so many facilities of free movements. That means that German voters have not even now understood or was hidden from them the meaning of the "agreement" to which Chancellor Kohl referred. Stephens's effort to remind us the story is the argument that if Germany would be the worst hit country because of a possible EU dismemberment, a Union to which Germany owes its prosperity, then Germany has "a proportionate responsibility for EU stability" from now on. To continue the "Berlin mantra" of not accepting a fiscal transfers union, as a symbol of the non-benefits sharing of EU, opposed to the non-risks sharing, that means that Germany will lose in front of the European electorate in both cases.

In reality, the ECB's unorthodox monetary policy (QE and negative interest rates) is a shadow fiscal transfer or shadow transfer union, represented by the "mountain of liabilities" reaching already 40% of the euro area GDP. ECB Target 2 balance clearly indicates that an economic union "must admit the role of fiscal policy in managing economic demand as the drive of the economy. The battle of the 22 from euro area is carried by between those who have fiscal space (Germans and North neighbors) and refuse to use it and those who advocate for fiscal expansion (the group of countries led by France) which do not have fiscal space". Stephens rightly states that there has never been a better opportunity for all Eurozone countries to understand the need for faster implementation of structural reforms and to invest in the future of Europe. Inflation is almost non-

existent, borrowing costs are close to zero or negative and the investment gap is at its maximum, at a time when big and new business opportunities are available. They are determined by the communications revolution, by changing the economic profile of the European continent in front of climate change, digitization and artificial intelligence, domains where the EU is still behind the US and China.

The loss of these opportunities due to the narrow-mindedness of some euro area member states questions the ECB's mandate and independence. Draghi's legacy, as well as the recommendations made by former FED President, Alan Greenspan, will lead central bankers or politicians to better understand the useful of a close cooperation of central bank leaders with governments, which does not necessarily mean political interference and loss of independence of a central bank. Larry Elliott, arguing that leaders of central banks were always a political choice ("so their 'independence' doesn't mean much", in The Guardian), reiterates the views of many experts that the "neoliberal status" of separation of monetary and fiscal policies may not survive a future financial crisis. Elliot says that what the central banks have shown with their independence has been the failure to stop the accumulation of the biggest asset bubble started in 2000 and, instead of preventing the formation of huge mortgage debt, they were happy to keep inflation down, focusing only on price stability issue.

In the case of the ECB, also is added the delay in reaction to the crisis and when it came through monetary incentives (QE and record negative interest rates) it succeeded only in slow downing the economic recession or keeping the recovery only within fragile limits. But even so, one could see the benefits of a productive mix of monetary and fiscal policies. In the case of governments, it was admissible, among other things, that the quantitative easing policy had the capacity to stimulate on long-term a favourable economic environment if more bonds were issued, for example, for costly environmental protection projects with an impact on all technologies which could be financed with zero interest etc.

The big taboo on the belief that monetary and financial policies are attributes of totally separate institutions and that central banks operate independently of any political interference is about to dissipate. There are deeper analyses, resulting from the increasingly insistent assault of the politicians against this taboo. United States President, Donald Trump, spoke on the FED policy, mentioning the danger to the economy of the rapid increase in monetary policy interest. Bernie Sanders criticizes the FED for its policy, as it remains captive to Wall Street interests. Marvin King, while it was the governor of the Bank of England, allowed himself to criticize the English government for not implementing austere policies and delaying reforms, while he was also claiming its independence in setting interest rates. Commentaries that are more political are already on the agenda and reveal the beginning of the myth's decline, as central banks are depoliticized. By taking their judgments further, US economist Thomas Palley decrypts central bank independence as a product of the neoliberal views advanced by the "Chicago School of Economics."

From the perceptions of the aforementioned school, it is noted the treatment of fashionable contradictions in liberal doctrine. If employees are struggling for higher employment, then they have greater bargaining power. Instead, employers prefer more unemployment to keep wages low and increase profits. From this conflict, it turns out that central banks keep the part of the capital, when they claim that if the natural rate of unemployment has reached its target, any further stimulation of the economy will lead to rising inflation, which is in their mandate to stop it. Elliott declares his premonition in a more pragmatic than visionary manner: "When the next crisis comes, it will become a far too political subject to be left to the care of unelected technocrats. If this crisis is to be managed effectively, then the era of independent central banks will end".

ECB monetary policy and international impact

The measures to reduce interest rates and buy government bonds within the quantitative easing program in euro area started late compared with the US and the UK due to a conflict of vision that is still ongoing and which has had the effect of some resignations from the Board of Governors of the ECB. The inefficiency of reaching the inflation threshold of 2% with impact on the economic growth of the euro area has created confusion for the business environment through the controversies in the ECB Governing Council debates on the quantitative easing policy, applicability

and size, stopping, continuing, or reducing the level of quantitative relaxation, when, how and why etc. These entire where linked with the fragile and unconsolidated economic developments in the euro area, the conclusions of many analysts showing failures in the face of deflation danger and the economic stagnation in the euro area. The ECB's recent measures to practically revive the troubled economy of the euro area - through higher interest rates in a negative territory and the promise to buy more bonds without any clear term to stop them, with the effect of pushing down credit costs, will at least two effects. It will decisively influence the mandate of the future ECB President - Christine Lagarde, Mario Draghi's successor, from November 1, 2019 - and will create political pressure on the FED and the Bank of Japan to take further steps to relax the policy monetary in the perspective of slowing global growth, including under the threat of protectionism.

What Draghi recalled in the latest comments on the ECB's decision of 12 September 2019, regarding the conduct of monetary policy: "you remember saying that we have all the tools on the table, ready to use them". That gives the perception that he has achieved what he has proposed from the point of view of the available instruments. It remains to be seen, however, whether their combination will be sufficient to strengthen the Eurozone in the face of the effects of Brexit and the US-China and US-EU trade war. Reuters reports that Draghi`s ideas are confronted with the opposition of the representatives of Germany and France and a council member on the relaunch of the quantitative easing program with an immediate stimulus effect. However, more than that, he induced a virulent reaction of the US president who, in his battle with the Fed to adopt and keep relaxed monetary policy, appreciated that the EU is trying to depreciate the euro against a strong dollar affecting US exports. It is interesting Trump's statement regarding the FED policy in this context: "The Fed sits, and stits, and sits. They get paid to borrow money, while we (the US government - n.n.) are paying interest!" obviously high.

The reduction by 10 basis points of the monetary policy interest, at minus 0.5%, was expected by analysts and had the majority of the ECB council. What was surprising in the markets was the impossibility to link the purchases of government bonds (at a level of 20 billion euros a month) with a possible resumption of growth of ECB interest rate, in the context in which the economic growth of the euro area was amended down to 1%, well below its potential. This has precisely created the perception of continuing the ECB's QE policy indefinitely and of increasing the feeling of its uncertainty. The negative reaction of commercial banks in terms of their costs when depositing overnight unused currency surpluses at the ECB did not delay, although the ECB promised to establish multiple overnight interest rates (multi-tier deposit rate) in order to mitigate the costs of not using the money. However, here remains the problem of the losses of commercial banks from their lending to the economy, in the context of extremely low interest rates which will reduce their presence on the market.

The context of the limits of action of the central banks in the world points out that what remains to stimulate the economy are only fiscal policies, which means that governments have to spend more on cheaper contracted debts. Thus, the Draghi's call, more and more repeated at the end of his term, has the purpose of emphasize the government’s task to remove the economies from the impasse of slowing growth. The appeal, however, embarrasses Germany with the obsession of a balanced public budget at a time when it’s budgetary and current account surpluses are at embarrassing high levels, as an expression of the benefits of its EU membership. However, a number of analysts speak of the adverse risk, of lowering negative monetary policy interests, namely the increase of savings / deposits in commercial banks (which is already happening in Germany), whereby the purpose of the euro depreciation to contribute to the inflation increase becomes irrelevant.

We believe that the most important legacy of Draghi's mandate, after the last package of measures taken by the ECB, is to renew the pressure on the governments of the euro area countries to take fiscal policies seriously. This, although repeated in another context by former ECB President Jean-Claude Trichet, upsets or confirms the doubts of direct decision-makers within the ECB (we are witnessing resignations and rising votes against) and confirms that investors' doubts of any kind and economist attention are more likely to be focused on the effectiveness of the ECB's latest stimulus package, and less on what the political governments should have done long ago. This further indicates that the euro area could work better if there was a more serious political bent, at EU level, to resolve fiscal transfers, which would also be in the benefit of improving the euro design. In this way, the architecture of the single currency and its unique and well-focused role for

development could be complemented, being eliminated or greatly reduced the dichotomy between the independence of the ECB's monetary policy and the individualism, becoming already selfishness, in the independent fiscal policies of each EU member state.

What emerges from the comments on the latest package of measures taken by the ECB is the focus on Draghi's message: "it is time for fiscal policy to assume its role", but there is concern that a delay in implementing its role will no longer have the effect expected. The euro area inflation forecast is 1% for 2020 and 1.5% for 2021, which means that a QE policy term in relation to the quantitative definition of price stability remains at least distant. This should take into account the governments, at least for cheaper financing of large public projects, whether or not they have sufficient fiscal space to do so. But, after the development of the economies of the euro area, more influenced by international factors, the opportunity of the low financing costs seems to be of no interest in the normal theoretical judgments of the mechanism of transmitting the monetary impulse. As a result, more or less seriously, it is said that Lagarde will have to have more discussions with finance ministers than with the ECB Governing Council, considering market reactions as soon as the ECB measures are communicated.

When announcing the ECB package, the euro increased with impact on bond yields - a correct manual response - so that after three hours the euro would depreciate. In this case, as an explanation, it was the high volatility of investor confidence (rather of its lack) in the long-term unclear effect of the ECB's last-ditch efforts, with Draghi as president. Needless to say, the ECB has become a prisoner of its future guiding policy, creating market expectations that have not been met for years, such as economic growth and inflation, with the growth of the promised future demand being swallowed by an uncertain present. Some experts talk about the fact that the QE policy was effective at the beginning of the application in order to avoid a drastic slowdown in economic growth, but we cannot "borrow" infinitely from future economic growth for the present, as the business cycle itself is disrupted (says Ian Hislop, Head of Global Equities at Merian Global Investors).

If there is a perception that the ECB's QE policy only inflates asset prices without bringing anything into the real economy, then, says Hislop, a capitalist perception is attacked, that investors usually support strong companies, and weak ones usually let them die. The QE policy no longer makes this distinction, supporting all and inducing false realities regarding the durability of companies. Draghi himself confirmed his concern about the unintended negative consequences of QE policy, while its side effects are less visible than those of interest rate cuts. Or, such a message shows that, in the end, "doing whatever is necessary", as a promise to anchor inflation at the level of price stability definition, could no longer satisfy markets or bring about real sustainable economic growth.

An inventory of the challenges must be made as complete as possible, which seems never to be complete, as long as some are answered late and seem careless, as the old ones that are not resolved in time attract others that are more difficult to tackle in a world too divided, which is the characteristic also of the euro area.

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FISCAL ISSUES IN THE GLOBALIZED ECONOMY & FINANCIAL MICROECONOMICS

ANALYSIS OF AUTOMATIC STABILIZERS FOR THE CRITERIA OF THE GENERAL GOVERNMENT DEFICIT AND SURPLUS AS PERCENTAGE OF GDP – CASE STUDY FOR ROMANIA

PhD Alina Georgeta Ailincă[3]

Abstract:

The Maastricht Treaty but also the programmatic documents of the European Union require that an automatic stabilization mechanism has to be devised in order to meet the criteria of nominal economic convergence. For the analysis of the budget deficit expressed as a percentage of GDP, the literature does not yet draw up a curdled analysis, but only either an analysis in particular on the revenue side, emphasizing the qualities of the progressive fiscal regimes in the automatic stabilization, or an analysis on the side of the budgetary expenses, recognized in having the capacity of economic stabilization especially in Western economies. Thus, the article is designed to be a plea for designing a rather automatic mechanism for reaching the 3% of GDP threshold imposed by the Maastricht criterion regarding the budget deficit, carrying out an empirical, econometric analysis for Romania starting from the functioning mode of the instruments used by the Ministry of Finance.

Keywords: *convergence, automatic stabilization, Romania*

JEL classification: *E63, H11, H62*

Introduction

In order to accede to the euro area, the member states of the European Union (EU) are evaluated by the European institutions in the light of the nominal economic convergence criteria set out in the Maastricht Treaty. The United Kingdom and Denmark are in the situation of non-accession to the third stage of the Economic and Monetary Union (EMU) and in addition, the United Kingdom, following the referendum from the summer of 2016, is also joining the process of leaving the European Union. This exit phenomenon can cause serious disruptions not only for the United Kingdom, for which the decision is assumed, but especially for the rest of the 27 member countries. Therefore, only a few states in the centre and east of the EU are still in the "competition" of joining the euro area.

Therefore, the sustainability of meeting the criteria of nominal economic convergence is extremely important for a country to join the euro area. Once entered into the EMU, that country will have to be able to remain without problems within the range of variation established by the effective value of the criterion indicator and the reference for that criterion for the time period related to the evaluation.

Although the necessity of non-discretionary mechanisms is invoked, in the respect of the nominal economic convergence criteria, up to the present moment, the political decisions and the discretionary actions outline the management of the compliance with the nominal economic convergence criteria. Moreover, the management is done individually, by each country, when maybe it would be necessary also a centralized management or piloting for the convergence criteria, especially if the variations of them are due to a common shock. Thus, the article wants to highlight through a case study on the situation of Romania, the way to remedy the budget deficit in order to meet the requirement of the fiscal-budget criterion of 3% regarding the balance of the consolidated general budget in GDP.

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Description of the Problem

Meeting nominal economic convergence criteria on the basis of an automatic stabilization mechanism is not only an important EU objective for accessibility within the euro area, but also a clear desire of Member States that are facing successive overruns of nominal convergence criteria. This aspect is extremely well defined in the case of the budget deficit, especially in the new Member States or the south-east flank of the EU.

For the analysis of the budget deficit expressed as a percentage of GDP, the specialized literature does not yet draw up a closed analysis, but only either an analysis in particular on the revenue side, emphasizing the qualities of the progressive fiscal regimes in the automatic stabilization, or an analysis on the part of the budgetary expenses, recognized as having the capacity of economic stabilization especially in Western economies.

Literature review

Numerous works present the qualities of automatic stabilizers, designed of course on Keynesian theory, but they also present the possibility of dissimulation of employment through the prism of "generous" social insurances. The automatic stabilizers are little treated in the topics of monetary policy, being par excellence debated by those who analyse the fiscal-budgetary policy.

Even in the fiscal-budgetary policy, the analysis of automatic stabilizers is often disjoint: some treat exclusively the expenditure part (especially the unemployment benefits) (Melitz and Darby, 2008), others exclusively the income part (especially taxes) (Auerbach and Feenberg, 2000).

In some situations, the rate is the most important for automatic stabilisation, in others, for example, regarding taxes, the basis of the tax, shrinking (both tax basis and tax) in the downfall period of the economic cycle.

Some studies focus on the conjuncture character (pro-cyclic, anti-cyclic a-cyclic) of automatic stabilizers, and others on the rather structural character of automatic stabilizers such as government size (Rodrik, 1998, Fatás and Mihov, 2001). Some studies focus on the size of automatic stabilizers, others on their effectiveness and effects. Also, the progressive taxation is considered a good automatic stabiliser, but there is no agreed view in the literature of what automatic stabilisers are and how they function.

Although there are clear recommendations, in the EU's programmatic documents, regarding the use of automatic stabilizers on convergence, so far there are no models and methods by which Member States can actually do these things.

Methodology and Data

Thus, the article is designed to be a plea for designing a rather automatic mechanism to reach the 3% of GDP threshold imposed by the Maastricht criterion regarding the budget deficit. Empirical, econometric analysis in the case of Romania started from the functioning of the instruments used by the Ministry of Finance. For the easy and practical understanding of the functioning of the automatic stabilizers in the case of the balance of the general budget consolidated in the GDP, we used a case study on the quarterly data in Romania for the period 2007-2019 (June).

Results

Thus, we couple the theoretical case of the automatic stabilizers proposed in the previous works (coordinator Ailincă, 2018, "Automatic stabilizers in the economy - concept, classification, design elements", project of the Centre for Financial and Monetary Research "Victor Slăvescu" and of the work to Dinga coord., 2011) with the structural elements present in the Consolidated General Budget (BGC) (see Table 1).

Table 1

Identification and coupling of theoretical with practical elements regarding automatic stabilizers

Possible automatic stabilizers	Personal income tax	Corporate income tax	Para fiscal withdrawals (contributions)	Transfers (social assistance) (social assistance, social subsidies, minimum guaranteed income, unemployment benefit)
General consolidated budget	Tax on wage and income	Tax on profit	Insurance contributions	Social assistance

Source: author's conception, previous works mentioned and budget execution of the Ministry of Finance. Note in the text: Tax on wages and income with ISV, Tax on profit - TP, Insurance contributions - IC and Social assistance - SA.

During the analysis period, we observe that there are 42 deficit situations, 8 surpluses and 7 excessive deficits. In this material, we consider an excessive deficit to exceed the threshold of -3% of GDP for the balance of the general consolidated budget, whether or not it has been catalogued this way by the European bodies. We find on the basis of the correlation matrix (see Table 2) between the elements selected above, the following:

-All the elements of income and expenditure have a strong negative correlation with the balance of the general consolidated budget, thus recommending them due to the negative feedback as good candidates for the automatic stabilization of the balance,

- Being internal structural elements of the consolidated general budget, all the elements of income and expenditure have positive correlations between them, even stronger than in the case of their connection with the balance of the general consolidated budget,

-Of the revenues and expenses, the expenses seem better candidates for managing the balance of the consolidated general budget, having a slightly higher correlation,

-Among the incomes, we can notice the social insurance contributions, and on the expenses side the social assistance has a correlation with the surplus / deficit (S/D) more intense than the total of the budgetary expenses. This aspect confirms, once again, the economic theory regarding the budgetary elements with the role of automatic stabilization.

It is worth noting that an important role in evaluating the classification in the deficit or surplus situation is the reporting to GDP. Thus, it can be considered necessary to eliminate GDP influence and to refer to the selected budgetary components in absolute form (thousand Lei), as well as to make a linear regression equation based on the above information: S / D = f (TWI, TP, IC, SA) (see Table 3).

Table 2

Correlation matrix between the candidate elements for the status of automatic stabilizers in the case of the balance of the general consolidated budget expressed as a percentage of GDP

	S/D	*I*	*E*	*TWI*	*TP*	*IC*	*SA*
S/D	1						
I	-0.5988	1					
E	-0.7039	0.9904	1				
TWI	-0.5697	0.9707	0.9593	1			
TP	-0.5992	0.9390	0.9364	0.9393	1		
IC	-0.6451	0.9801	0.9807	0.9230	0.9380	1	
SA	-0.7196	0.9747	0.9887	0.9484	0.8964	0.9594	1

Source: author's conception and processing; quarterly data from the budget execution for the period 2007-June 2019, Ministry of Finance of Romania.

Table 3

The result of the regression equation regarding the connection between the balance of the general consolidated budget and the selected items of budgetary components, for the period 2007 - June 2019

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.9103792
R Square	0.8287903
Adjusted R Square	0.7958853
Standard Error	6084.0101
Observations	50

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	4	8.242E+09	2.061E+09	55.669083	7.429E-17
Residual	46	1.703E+09	37015178		
Total	50	9.945E+09			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
TWI	3.320	0.593	5.602	0.000	2.127	4.513	2.127	4.513
TP	-3.133	0.972	-3.223	0.002	-5.090	-1.176	-5.090	-1.176
IC	1.057	0.265	3.984	0.000	0.523	1.591	0.523	1.591
SA	-1.552	0.266	-5.845	0.000	-2.087	-1.018	-2.087	-1.018

Source: author's conception and processing; quarterly data from the budget execution for the period 2007-June 2019, Ministry of Finance of Romania.

Analyzing the value of the coefficient of determination (R2), it is observed that the value of 0.8287903 is extremely satisfactory, and the adjusted R2 of 0.7958853 at the sample level of 50 observations suggests a normal, strong correlation between the variables in the model.

The coefficients are significantly different from zero, the tax on wages and the tax on profit are noticeable with slightly higher values and the tax on profit and social assistance expenses have negative correlations.

The associated probability, or p-value, is well below 0.05 for all the elements in the model, thus, the null hypothesis H0 being rejected. So, we can conclude that the main influence on the balance of the consolidated general budget comes mainly from these factors.

In order to a better clarification regarding the link between the balance of consolidated general budget and the items of income and expenditure analysed, we select only the deficit situations (including the excessive deficit) (see Table 4).

Table 4

The result of the regression equation regarding the link between the budget deficit and the selected elements of budgetary components, for the period 2007 - June 2019

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.9461771
R Square	0.8952511
Adjusted R Square	0.8606656
Standard Error	5211.7071
Observations	42

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	4	8821427857	2.205E+09	81.193059	8.441E-18
Residual	38	1032151838	27161890		
Total	42	9853579695			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
TWI	2.85	0.522	5.454	0.000	1.790	3.903	1.790	3.903
TP	-3.06	0.857	-3.568	0.001	-4.790	-1.322	-4.790	-1.322
IC	1.02	0.231	4.414	0.000	0.551	1.485	0.551	1.485
SA	-1.41	0.235	-6.012	0.000	-1.889	-0.937	-1.889	-0.937

Source: author's conception and processing; quarterly data from the budget execution for the period 2007- June 2019, Ministry of Finance of Romania

The value of the determination coefficient R2 of 0.8952511 and of the adjusted R2 (0.8606656) are extremely satisfactory.

The associated probability, or p-value, is well below 0.05 for all the elements in the model, the null hypothesis H0 being rejected.

The coefficients are significantly different from zero, and the income tax and social assistance expenses have a negative correlation, which propose these elements in the position of automatic stabilizers.

Thus, we can conclude that the main influence on the budget deficit comes mainly from these factors in the form of the equation:

$$S/D=2.85*TWI-3.06*TP+1.02*IC-1.41*SA \quad [1]$$

If we consider only the situations with excessive deficit, the correlation matrix (see Table 5) indicates besides the corporate income tax and the social assistance expenses, especially the tax on wages and income.

Table 5

The correlation matrix between the elements considered automatic stabilizers and the excessive deficit

	S/D	*I*	*E*	*TWI*	*TP*	*IC*	*SA*
S/D	1						
I	-0.5822	1					
E	-0.6784	0.9923	1				
TWI	-0.6706	0.9812	0.9888	1			
TP	-0.6215	0.8563	0.8684	0.9200	1		
IC	-0.6265	0.9806	0.9815	0.9976	0.9225	1	
SA	-0.7252	0.9287	0.9497	0.9078	0.6902	0.8893	1

Source: author's conception and processing; quarterly data from the budget execution for the period 2007-June 2019, Ministry of Finance of Romania

Given the extremely limited number of records on the excessive deficit, we will only use the information in Table 6 for guidance, due to the p-value values well over 0.05, yet formulating the following regression equation: S/D = -5.03*TWI-3.99*TP + 3.34*IC-0.83*SA [2]

In this equation S/D is in fact the excessive deficit. This equation should be subtracted from the above to reflect an "ideal" situation, more exactly the deficit without excessive deficit:

S/D = (2.85+5.03)*TWI+(-3.06+3.99)*TP+(1.02-3.34)*IC+(-1.41+0.83)*SA or

S/D = 7.88*TWI+0.93*TP-2.32*IC-0.58*SA or more rough S/D=8*TWI+TP-2*IC-*SA [3]

This equation is a first element that can help us develop a series of scenarios regarding the evolution of the general consolidated budget balance in order to overcome the excessive deficit situation.

It should be noted that the situation is not very well outlined due to the small number of records for the case of excessive deficit and of budgetary surplus; thus, the equation [3] is therefore also indicative.

If we take into consideration the fact that the expenses with social insurance are a factor of automatic stabilization at the macroeconomic level, and the social contributions represent a delicate aspect for the employees, we consider, beyond the scenario 1, not to intervene with changes on these budgetary fields.

Moreover, we would prefer to do scenarios in particular on the tax on wages and income and less on the tax on profit, considering that the tax on wages and income is sufficiently bidding on the automatic stabilization especially by using the tranches of income and implicitly the rates differentiated on tranches.

Table 6

The result of the regression equation regarding the link between the excessive budget deficit and the selected elements of budgetary components

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.9965612
R Square	0.9931342
Adjusted R Square	0.6529351
Standard Error	3427.8787
Observations	7

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	4	5.099E+09	1274768932	108.48772	0.0091543
Residual	3	35251056	11750352.13		
Total	7	5.134E+09			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
TWI	-5.03	18.02	-0.28	0.80	-62.39	52.33	-62.39	52.33
TP	-3.99	4.86	-0.82	0.47	-19.47	11.48	-19.47	11.48
IC	3.34	4.49	0.74	0.51	-10.96	17.63	-10.96	17.63
SA	-0.83	1.15	-0.72	0.52	-4.48	2.83	-4.48	2.83

Source: author's conception and processing; quarterly data from the budget execution for the period 2008 December - 2011 December, Ministry of Finance of Romania

We set out below the hypotheses for 11 scenarios (see details in Appendix 2), doing simulations to finally solve the problem of excessive deficit:

-Scenario 1 – starts from the equation S/D=8*TWI+TP-2*IC-2*SA,
-Scenario 2 – involves observing the equation S/D=5*TWI+1*TP+1*IC-1*SA,
-Scenario 3 – in which we keep insurance contributions as well as social assistance as they are and we only index TWI and TP with their values,
-Scenario 4 – in which we keep the insurance contributions as they are also the social assistance, we index only TWI and TP with half of their values,
-Scenario 5 – where we keep as in the initial form of the excessive deficit, IC, SA, TP and index only one time TWI,
-Scenario 6 – where we keep as in the initial form the excessive deficit, IC, SA, TP and index only half of its value the TWI,
-Scenario 7 – in which we keep the SA as in the situation of excessive deficit and index TWI with a quarter of its value, IP with a quarter of its value, IC with a quarter of its value,
-Scenario 8 – we do not change any item of income, we do not change from expenses nor SA, but we reduce the total expenses by a quarter of the value of SA,
-Scenario 9 – (mixed) we increase TWI by a quarter, TP by a quarter, we keep the insurance contributions and social assistance contributions, but we reduce the total expenses by a quarter of the value of SA,
-Scenario 10 – (mixed) we leave IC, TP and SA in place and we modify instead only TWI on a progressive regime (on tranches of 20, 40, 50) and reduce the total expenses by a quarter of SA,
-Scenario 11 – (mixed) we leave IC, TP and SA in place; we modify TWI on a progressive basis (in tranches of 16, 32, 50) and reduce the total expenses by a quarter of SA.

Figure 1 is elaborated based on the scenarios.

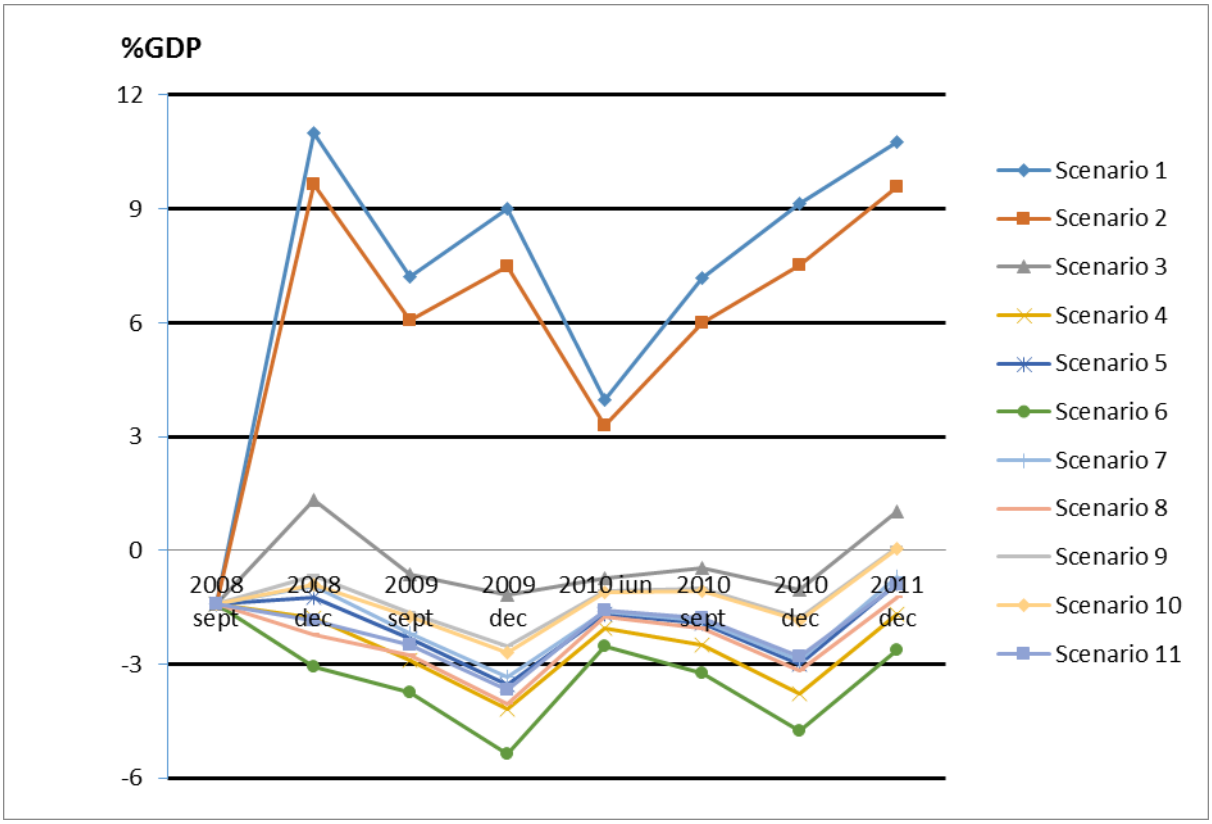

Figure 1–The evolution of the excessive budget deficit through the perspective of the 11 scenarios

Source: author's conception and processing; quarterly data from the budget execution for the period 2008 September - 2011 December, Ministry of Finance of Romania

Can be noted that the initial equation outlines an extremely optimistic scenario (scenario 1), while scenarios 4,5,6,8 and 11 are rather realistic. Scenarios 9, 10 and 11 include simulations on both the revenue side and the expense side (mixed scenarios). Scenario 10 and 11 describe the introduction of progressive rates on wages and income tax.

If we consider the mechanism of automatic adjustment of the wages and income tax as an iterative one, we can easily notice that a number of scenarios can be conceived in a progressive form (see figure 2).

Regarding the design of a progressive wage taxation simultaneously with the reduction of the general expenses with a quarter of the social assistance expenses, the mixed scenarios 11 and 10 can also be conceived as a succession for the gradual reduction of the excessive deficit.

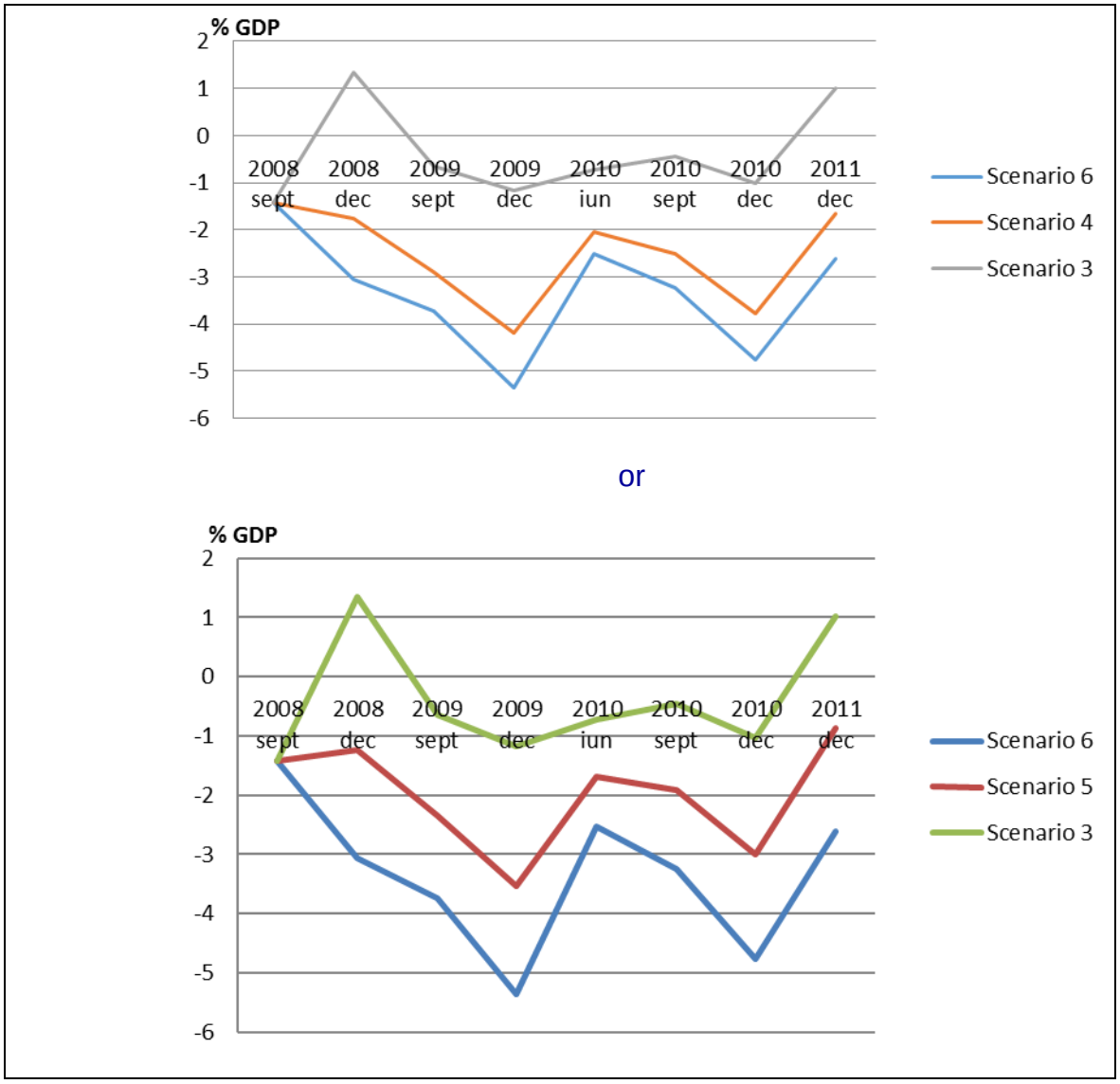

Figure 2 - Evolution of the excessive budget deficit through the prism of several scenarios that can be thought of as successive (focusing on the progressive increase of the tax on wages and income in the equation of the budget deficit)

Source: author's conception and processing; quarterly data from the budget execution for the period 2008 September - 2011 December, Ministry of Finance of Romania

Conclusions

Due to an extremely unfavourable structure of the labour market regarding payroll in Romania, more precisely the formation of a pyramid with an extremely large base of employees with low and very low incomes and a "peak" consisting of several tens of thousands of employees with incomes over 10,000 lei / month, the progressivity is a solution not as happy as it might seem at first sight.

No matter how high the tax rates are on income brackets, they will not be able to bring substantial real benefits to the revenues collected in the state budget considering this "pyramid" of payroll. Therefore, the problem can be solved effectively only in the context where labour market policies aim to increase the range of employees with gross incomes between 3000 and 10,000 lei / month and, to a lesser extent, employees with incomes over 10,000 lei / month . The high rates of tax on progressive structure, especially at the "peak" can smooth the aspect of the salary pyramid in Romania, but it is imperative to increase the middle layer regarding the salary, gradually reducing the number of those with gross incomes below 3000 lei per month (over 90% of the employed population of Romania!).

The shape of this „pyramid" in Romania explains a series of economic and social imbalances, as well as the inability of automatic fiscal-budgetary stabilizers to act in order to improve them and to smooth the excessive budget deficit. Therefore, the action also by reducing the public expenses is extremely necessary for any automatic stabilization program, but in no case by reducing the social insurance expenses.

We also note that the period of excessive deficit is perfectly superimposed over the period of global economic crisis, more precisely December 2008 - December 2011, a fact that recommends besides the automatic mechanism imposing fiscal progression also discretionary measures, well targeted, for smoothing the "collapse" of the deficit and avoiding entering in the state of excessive deficit.

Future Directions

Depending on the availability of data, the analysis can be deepened with simulations and scenarios regarding the corporate income tax revenues for Romania and for other countries. This can be done with alternatives of multiple variants regarding changing either the tax base or the tax rate, or simultaneously, both, so that, by successive adjustments, with or without simultaneous modification of the tax on wages and income or other budgetary fields, the criterion of the consolidated budget balance in the GDP formulated in the Maastricht Treaty to be respected.

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Annex 1 - highlighting the excessive deficit situation as well as the simulations on the scenarios regarding the balance of the general budget consolidated in the GDP (case study for Romania)

Excessive deficit - the initial hypothesis

	Surplus/ Deficit	Surplus/ Deficit	Income	Expenses	Tax on wage and income	Tax on profit	Insurance contributions	Social Assistance
	S/D (%GDP)	S/D	I	E	TWI	TP	IC	SA
2008 Dec.	-4.80	-24654.9	164466.8	189121.7	18365.7	13045.9	48419.8	53592.4
2009 Sept.	-5.10	-25563.2	115770.1	141333.3	13951.0	8440.8	36297.8	47237.9
2009 Dec.	-7.20	-36400.6	156624.9	193025.4	18551.4	11893.0	47872.0	63962.1
2010 Jun.	-3.35	-18070.0	77225.8	95295.8	8953.0	5241.1	23131.1	34934.6
2010 Sept.	-4.56	-23324.5	120385.4	143709.9	13486.0	7521.4	34414.2	51600.5
2010 Dec.	-6.51	-33305.2	168598.5	201903.6	17956.8	10115.1	45697.2	68601.9
2011 Dec.	-4.35	-23836.7	181566.9	205403.6	19076.4	10309.1	50637.3	68007.5

Source: Budget execution, quarterly data, Ministry of Finance of Romania. Where there are no percentages, the data is in millions of lei.

Scenario 1- simulation according to the equation: S/D=8*TWI+TP-2*IC-2*SA

	Surplus/ Deficit (% GDP)	Surplus/ Deficit	Income	Expenses	Tax on wage and income	Tax on profit	Insurance contributions	Social Assistance
	S/D(%GDP)	S/D	I	E	TWI	TP	CA	SA
2008 Dec.	10.99	55485.2	191014.5	135529.3	146925.6	26091.8	-96839.6	107184.8
2009 Sept.	7.20	35796.0	129891.4	94095.4	111608	16881.6	-72595.6	94475.8
2009 Dec.	9.02	45587.3	174650.6	129063.3	148411.2	23786.0	-95744	127924.2
2010 Jun.	3.98	21469.9	81831.1	60361.2	71624	10482.2	-46262.2	69869.2
2010 Sept.	7.17	36663.3	128772.7	92109.4	107888	15042.8	-68828.4	103201.0
2010 Dec.	9.13	46695.2	179997.0	133301.7	143654.4	20230.2	-91394.4	137203.8
2011 Dec.	10.78	59060.8	196456.9	137396.1	152611.2	20618.2	-101274.6	136015.0

Source: author's conception; quarterly data, Ministry of Finance of Romania. Social assistance is of course with the minus sign, being an element of expenses. Where there are no percentages, the data is in millions of lei.

Scenario 2- simulation according to the equation: S/D=5*TWI+1*TP+1*IC-1*SA

	Surplus/ Deficit	Surplus/ Deficit	Income	Expenses	Tax on wage and income	Tax on profit	Insurance contributions	Social Assistance
	S/D (%GDP)	S/D	I	E	TWI	TP	IC	SA
2008 Dec.	9.66	48807.9	237929.6	189121.7	91828.5	13045.9	48419.8	53592.4
2009 Sept.	6.08	30240.8	171574.1	141333.3	69755.0	8440.8	36297.8	47237.9
2009 Dec.	7.48	37805.1	230830.5	193025.4	92757.0	11893.0	47872.0	63962.1
2010 Jun.	3.29	17742.0	113037.8	95295.8	44765.0	5241.1	23131.1	34934.6
2010 Sept.	5.99	30619.5	174329.4	143709.9	67430.0	7521.4	34414.2	51600.5
2010 Dec.	7.53	38522.0	240425.7	201903.6	89784.0	10115.1	45697.2	68601.9
2011 Dec.	9.58	52468.9	257872.5	205403.6	95382.0	10309.1	50637.3	68007.5

Source: author's conception; quarterly data of Ministry of Finance of Romania. Where there are no percentages, the data is in millions of lei.

Scenario 3 - in which we keep the insurance contributions and the social assistance as they are and we index only TWI and TP with their own values

	Surplus/ Deficit	Surplus/ Deficit	Income	Expenses	Tax on wage and income	Tax on profit	Insurance contributions	Social Assistance
	S/D (%GDP)	S/D	I	E	TWI	TP	IC	SA
2008 Dec.	1.34	6756.7	195878.4	189121.7	36731.4	26091.8	48419.8	53592.4
2009 Sept.	-0.64	-3171.4	138161.9	141333.3	27902	16881.6	36297.8	47237.9
2009 Dec.	-1.18	-5956.1	187069.3	193025.4	37102.8	23786	47872.0	63962.1
2010 Jun.	-0.72	-3875.9	91419.9	95295.8	17906	10482.2	23131.1	34934.6
2010 Sept.	-0.45	-2317.1	141392.8	143709.9	26972	15042.8	34414.2	51600.5
2010 Dec.	-1.02	-5233.3	196670.4	201903.6	35913.6	20230.2	45697.2	68601.9
2011 Dec.	1.01	5548.8	210952.4	205403.6	38152.8	20618.2	50637.3	68007.5

Source: author's conception; quarterly data of Ministry of Finance of Romania. Where there are no percentages, the data is in millions of lei.

Scenario 4 - in which we keep the insurance contributions and the social assistance as they are and we index only TWI and TP with half of their values

	Surplus/ Deficit	Surplus/ Deficit	Income	Expenses	Tax on wage and income	Tax on profit	Insurance contributions	Social Assistance
	S/D (%GDP)	S/D	I	E	TWI	TP	IC	SA
2008 Dec.	-1.77	-8949.1	180172.6	189121.7	27548.6	19568.9	48419.8	53592.4
2009 Sept.	-2.89	-14367.3	126966.0	141333.3	20926.5	12661.2	36297.8	47237.9
2009 Dec.	-4.19	-21178.3	171847.1	193025.4	27827.1	17839.5	47872.0	63962.1
2010 Jun.	-2.04	-10973.0	84322.9	95295.8	13429.5	7861.7	23131.1	34934.6
2010 Sept.	-2.51	-12820.8	130889.1	143709.9	20229.0	11282.1	34414.2	51600.5
2010 Dec.	-3.77	-19269.2	182634.4	201903.6	26935.2	15172.7	45697.2	68601.9
2011 Dec.	-1.67	-9144.0	196259.7	205403.6	28614.6	15463.7	50637.3	68007.5

Source: author's conception; quarterly data of Ministry of Finance of Romania. Where there are no percentages, the data is in millions of lei.

Scenario 5 - in which we keep as in the initial form the IC, SA and TP and index only once TWI with its value

	Surplus/ Deficit	Surplus/ Deficit	Income	Expenses	Tax on wage and income	Tax on profit	Insurance contributions	Social Assistance
	S/D (%GDP)	S/D	I	E	TWI	TP	IC	SA
2008 Dec.	-1.25	-6289.2	182832.5	189121.7	36731.4	13045.9	48419.8	53592.4
2009 Sept.	-2.33	-11612.2	129721.1	141333.3	27902	8440.8	36297.8	47237.9
2009 Dec.	-3.53	-17849.1	175176.3	193025.4	37102.8	11893.0	47872.0	63962.1
2010 Jun.	-1.69	-9117.0	86178.8	95295.8	17906	5241.1	23131.1	34934.6
2010 Sept.	-1.92	-9838.5	133871.4	143709.9	26972	7521.4	34414.2	51600.5
2010 Dec.	-3.00	-15348.4	186555.3	201903.6	35913.6	10115.1	45697.2	68601.9
2011 Dec.	-0.87	-4760.3	200643.3	205403.6	38152.8	10309.1	50637.3	68007.5

Source: author's conception; quarterly data of Ministry of Finance of Romania. Where there are no percentages, the data is in millions of lei.

Scenario 6 - in which we keep as in the initial form the IC, SA and TP and index TWI with only half of its value

	Surplus/ Deficit	Surplus/ Deficit	Income	Expenses	Tax on wage and income	Tax on profit	Insurance contributions	Social Assistance
	S/D (%GDP)	S/D	I	E	TWI	TP	IC	SA
2008 Dec.	-3.06	-15472.1	173649.7	189121.7	27548.6	13045.9	48419.8	53592.4
2009 Sept.	-3.74	-18587.7	122745.6	141333.3	20926.5	8440.8	36297.8	47237.9
2009 Dec.	-5.37	-27124.8	165900.6	193025.4	27827.1	11893.0	47872.0	63962.1
2010 Jun.	-2.52	-13593.5	81702.3	95295.8	13429.5	5241.1	23131.1	34934.6
2010 Sept.	-3.24	-16581.5	127128.4	143709.9	20229.0	7521.4	34414.2	51600.5
2010 Dec.	-4.76	-24326.8	177576.9	201903.6	26935.2	10115.1	45697.2	68601.9
2011 Dec.	-2.61	-14298.5	191105.1	205403.6	28614.6	10309.1	50637.3	68007.5

Source: author's conception; quarterly data of Ministry of Finance of Romania. Where there are no percentages, the data is in millions of lei.

Scenario 7 - in which we keep SA as in the situation of excessive deficit and index TWI with a quarter of its value, TP with a quarter of its value, IC with a quarter of its value

	Surplus/ Deficit	Surplus/ Deficit	Income	Expenses	Tax on wage and income	Tax on profit	Insurance contributions	Social Assistance
	S/D (%GDP)	S/D	I	E	TWI	TP	IC	SA
2008 Dec.	-0.93	-4697.1	184424.7	189121.7	22957.1	16307.4	60524.8	53592.4
2009 Sept.	-2.19	-10890.8	130442.5	141333.3	17438.8	10551.0	45372.3	47237.9
2009 Dec.	-3.33	-16821.4	176204.0	193025.4	23189.3	14866.3	59840.0	63962.1
2010 Jun.	-1.62	-8738.7	86557.1	95295.8	11191.3	6551.4	28913.9	34934.6
2010 Sept.	-1.85	-9469.1	134240.8	143709.9	16857.5	9401.8	43017.8	51600.5
2010 Dec.	-2.91	-14862.9	187040.7	201903.6	22446.0	12643.9	57121.5	68601.9
2011 Dec.	-0.70	-3831.0	201572.6	205403.6	23845.5	12886.4	63296.6	68007.5

Source: author's conception; quarterly data of Ministry of Finance of Romania. Where there are no percentages, the data is in millions of lei.

Scenario 8 - we do not change any income items, also we do not change expenses with SA, but we reduce the total expenses by a quarter of the value of SA

	Surplus/ Deficit	Surplus/ Deficit	Income	Expenses	Tax on wage and income	Tax on profit	Insurance contributions	Social Assistance
	S/D (%GDP)	S/D	I	E	TWI	TP	IC	SA
2008 Dec.	-2.23	-11256.8	164466.8	175723.6	18365.7	13045.9	48419.8	53592.4
2009 Sept.	-2.77	-13753.7	115770.1	129523.8	13951.0	8440.8	36297.8	47237.9
2009 Dec.	-4.04	-20410.0	156624.9	177034.9	18551.4	11893.0	47872.0	63962.1
2010 Jun.	-1.73	-9336.4	77225.8	86562.2	8953.0	5241.1	23131.1	34934.6
2010 Sept.	-2.04	-10424.4	120385.4	130809.8	13486.0	7521.4	34414.2	51600.5
2010 Dec.	-3.16	-16154.7	168598.5	184753.2	17956.8	10115.1	45697.2	68601.9
2011 Dec.	-1.25	-6834.8	181566.9	188401.7	19076.4	10309.1	50637.3	68007.5

Source: author's conception; quarterly data of Ministry of Finance of Romania. Where there are no percentages, the data is in millions of lei.

Scenario 9 - (mixed) we increase TWI by a quarter, TP by a quarter, we keep as they are the insurance contributions and social assistance, but we reduce the total expenses by a quarter from the value of SA

	Surplus/ Deficit	Surplus/ Deficit	Income	Expenses	Tax on wage and income	Tax on profit	Insurance contributions	Social Assistance
	S/D (%GDP)	S/D	I	E	TWI	TP	IC	SA
2008 Dec.	-0.67	-3403.9	172319.7	175723.6	22957.1	16307.4	48419.8	53592.4
2009 Sept.	-1.64	-8155.8	121368.1	129523.8	17438.8	10551.0	36297.8	47237.9
2009 Dec.	-2.53	-12798.9	164236.0	177034.9	23189.3	14866.3	47872.0	63962.1
2010 Jun.	-1.07	-5787.8	80774.3	86562.2	11191.3	6551.4	23131.1	34934.6
2010 Sept.	-1.01	-5172.5	125637.3	130809.8	16857.5	9401.8	34414.2	51600.5
2010 Dec.	-1.79	-9136.7	175616.4	184753.2	22446.0	12643.9	45697.2	68601.9
2011 Dec.	0.09	511.5	188913.3	188401.7	23845.5	12886.4	50637.3	68007.5

Source: author's conception; quarterly data of Ministry of Finance of Romania. Where there are no percentages, the data is in millions of lei.

Scenario 10 - we leave IC, TP and SA in place and we modify TWI on a progressive regime (on 20, 40, 50 tranches) and reduce the total expenses by a quarter of SA

	Surplus/ Deficit	Surplus/ Deficit	Income	Expenses	Tax on wage and income	Tax on profit	Insurance contributions	Social Assistance
	S/D (%GDP)	S/D	I	E	TWI	TP	IC	SA
2008 Dec.	-0.89	-4484.4	171239.2	175723.6	25138.1	13045.9	48419.8	53592.4
2009 Sept.	-1.73	-8609.3	120914.5	129523.8	19095.4	8440.8	36297.8	47237.9
2009 Dec.	-2.68	-13569.2	163465.7	177034.9	25392.2	11893.0	47872.0	63962.1
2010 Jun.	-1.12	-6035.0	80527.2	86562.2	12254.4	5241.1	23131.1	34934.6
2010 Sept.	-1.07	-5451.4	125358.4	130809.8	18459	7521.4	34414.2	51600.5
2010 Dec.	-1.86	-9533.1	175220.1	184753.2	24578.4	10115.1	45697.2	68601.9
2011 Dec.	0.04	199.6	188601.3	188401.7	26110.8	10309.1	50637.3	68007.5

Source: author's conception; quarterly data of Ministry of Finance of Romania. Where there are no percentages, the data is in millions of lei.

Scenario 11 - we leave IC, TP and SA in place and we modify TWI on a progressive regime (on 16, 32, 50 tranches) and reduce the total expenses by a quarter of SA

	Surplus/ Deficit	Surplus/ Deficit	Income	Expenses	Tax on wage and income	Tax on profit	Insurance contributions	Social Assistance
	S/D (%GDP)	S/D	I	E	TWI	TP	IC	SA
2008 Dec.	-1.9	-9397.3	166326.3	175723.6	20225.2	13045.9	48419.8	53592.4
2009 Sept.	-2.5	-12341.2	117182.6	129523.8	15363.5	8440.8	36297.8	47237.9
2009 Dec.	-3.7	-18531.7	158503.2	177034.9	20429.7	11893.0	47872.0	63962.1
2010 Jun.	-1.6	-8429.9	78132.3	86562.2	9859.5	5241.1	23131.1	34934.6
2010 Sept.	-1.8	-9058.9	121750.9	130809.8	14851.5	7521.4	34414.2	51600.5
2010 Dec.	-2.8	-14336.6	170416.6	184753.2	19774.9	10115.1	45697.2	68601.9
2011 Dec.	-0.9	-4903.3	183498.4	188401.7	21007.9	10309.1	50637.3	68007.5

Source: author's conception; quarterly data of Ministry of Finance of Romania. Where there are no percentages, the data is in millions of lei.

Annex 2 - explanation of how is design the scenarios 10 and 11 regarding the balance of the consolidated general budget in GDP (case study for Romania)

The basic scenario - the existence of the excessive deficit and the unique share of 16%

		Total number of employees (thousands pers.)	Income from tax on wages and income (TWI, mil Lei)	Tax Rate (%)	Total tax base of income from tax on wages (mil. Lei)	Total tax base of income from tax on wages per employee (lei / persons)
2008	Dec	4738.6	18365.7	16	1147.9	242.2353
2009	Sept	4505.1	13951.0	16	871.9	193.5445
2009	Dec	4367.7	18551.4	16	1159.5	265.4629
2010	Jun	4264.3	8953.0	16	559.6	131.2202
2010	Sept	4194.1	13486.0	16	842.9	200.9668
2010	Dec	4101.6	17956.8	16	1122.3	273.6249
2011	Dec	4172.1	19076.4	16	1192.3	285.7734

Source: author's conception; data of the Ministry of Finance and NIS.

Scenario 11 - the existence of the excessive deficit is improved by the existence of progressive quotas (16, 32, 50), see the difference between the two regimes

	Income tranches	Number of employees on tranches (thousands persons)	Progressive tax rate (%)	Total tax base on tranches (th. Lei)	Income from tax on wages and income on tranches (TWI, th. lei) (progressive)	Total income from tax on wages and income (TWI, th. lei) (progressive)	Income from tax on wages and income (TWI, th. lei)(flat rate)	The difference between the two regimes regarding TWI (th.lei)
2008 Dec	10000lei/ month	47.4	50	11.5	573.9	20225.2	18365.7	1859.5
	3000-10000lei/month	379.1	32	91.8	2938.5			
	Under 3000lei/ month	4312.1	16	1044.5	16712.8			
2009 Sept	10000lei/ month	45.1	50	8.7	436.0	15363.5	13951.0	1412.5
	3000-10000lei/ month	360.4	32	69.8	2232.2			
	Under 3000lei/ month	4099.6	16	793.5	12695.4			
2009 Dec	10000lei/ month	43.7	50	11.6	579.7	20429.7	18551.4	1878.3
	3000-10000lei/ month	349.4	32	92.8	2968.2			
	Under 3000lei/ month	3974.6	16	1055.1	16881.8			
2010 Jun	10000lei/ month	42.6	50	5.6	279.8	9859.5	8953.0	906.5
	3000-10000lei/ month	341.1	32	44.8	1432.5			
	Under 3000lei/ month	3880.5	16	509.2	8147.2			
2010 Sept	10000lei/ month	41.9	50	8.4	421.4	14851.5	13486.0	1365.5
	3000-10000lei/ month	335.5	32	67.4	2157.8			

	Under 3000lei/ month	3816.6	16	767.0	12272.3			
2010 Dec	10000lei/ month	41.0	50	11.2	561.2	19774.9	17956.8	1818.1
	3000-10000lei/ month	328.1	32	89.8	2873.1			
	Under 3000lei/ month	3732.5	16	1021.3	16340.7			
2011 Dec	10000lei/ month	41.7	50	11.9	596.1	21007.9	19076.4	1931.5
	3000-10000lei/ month	333.8	32	95.4	3052.2			
	Under 3000lei/ month	3796.6	16	1085.0	17359.5			

Source: author's conception; data of the Ministry of Finance, NIS and press

Scenario 10 - the existence of the excessive deficit is improved by the existence of progressive quotas (20, 40, 50), see the difference between the two regimes

	Income tranches	Number of employees on tranches (thousands persons)	Progressive tax rate (%)	Total tax base on tranches (th. Lei)	Income from tax on wages and income on tranches (TWI, th. lei) (progressive)	Total income from tax on wages and income (TWI, th. lei) (progressive)	Income from tax on wages and income (TWI, th. lei)(flat rate)	The difference between the two regimes regarding TWI (th.lei)
2008 Dec	10000lei/ month	47.4	50	11.5	573.9	25138.1	18365.7	6772.4
	3000-10000lei/month	379.1	40	91.8	3673.1			
	Under 3000lei/ month	4312.1	20	1044.5	20891.0			
2009 Sept	10000lei/ month	45.1	50	8.7	436.0	19095.4	13951.0	5144.4
	3000-10000lei/ month	360.4	40	69.8	2790.2			
	Under 3000lei/ month	4099.6	20	793.5	15869.3			
2009 Dec	10000lei/ month	43.7	50	11.6	579.7	25392.2	18551.4	6840.8
	3000-10000lei/ month	349.4	40	92.8	3710.3			
	Under 3000lei/ month	3974.6	20	1055.1	21102.2			
2010 Jun	10000lei/ month	42.6	50	5.6	279.8	12254.4	8953.0	3301.4
	3000-10000lei/ month	341.1	40	44.8	1790.6			
	Under 3000lei/ month	3880.5	20	509.2	10184.0			
2010 Sept	10000lei/ month	41.9	50	8.4	421.4	18459.0	13486.0	4973.0
	3000-10000lei/ month	335.5	40	67.4	2697.2			
	Under 3000lei/ month	3816.6	20	767.0	15340.3			
2010 Dec	10000lei/ month	41.0	50	11.2	561.2	24578.4	17956.8	6621.6
	3000-10000lei/ month	328.1	40	89.8	3591.4			
	Under 3000lei/ month	3732.5	20	1021.3	20425.9			
2011 Dec	10000lei/ month	41.7	50	11.9	596.1	26110.8	19076.4	7034.4
	3000-10000lei/ month	333.8	40	95.4	3815.3			
	Under 3000lei/ month	3796.6	20	1085.0	21699.4			

Source: author's conception; data of the Ministry of Finance, NIS and press

REDUCING TAX EVASION BY INCREASING THE QUALITY OF FISCAL INFORMATION

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Abstract:

This paper emphasizes the fact that the harmful role of tax evasion primarily influences state revenues and implicitly the ability of the state to ensure equality of taxpayers. From another perspective, should the taxpayers compete against each other in the product, goods and services market, they must pay the taxes and observe the same fiscal regulations, instead of favouring some of them. The involvement of the state in the taxpayers' observance of the fiscal regulations all over the tax jurisdiction demonstrates the principle of equality before the law. Should it be affected and tax evasion increases, the environment does not favour fair competition and affects the economic development capacity of the country. Therefore this paper suggests an increased quality of fiscal information in order to counteract tax evasion.

Keywords: tax evasion, fiscal information, state and local taxation

JEL classification: H30, H62, H71

Introduction

Budget: A mathematical confirmation of your suspicions.
AA Latimer

An increased quality of fiscal information is a way by which the state ensures the effective control of activities carried out in the economy. In terms of the ways of exercising control in reality, the state chooses to encourage efficient activities, whereas a weak involvement creates chaos and uncertainty; it allows some taxpayers to have an incorrect economic behaviour, violate the law, and it generates unequal treatment in comparison to other economic operators.

Unwavering state control should discourage those behaviours which increase tax evasion and underground economy. This can be achieved if the body called to perform the state financial control would have independence and credibility. The elements which ensure independence may be assuming and adopting internationally recognized standards, having predictable laws which lack subjectivism and which do not favour interest groups, having and using assumed unitary guide lines and practices. These elements may diminish subjectivism; they may contribute to equal treatment for all taxpayers and an improved environment for the economic operators. For this purpose, institutional conversion is possible as well as adjustment of the international fiscal rules correlated with the European ones in the local legislation.

Economic and fiscal protection seem to be very important considering the varied changing and repositioning context and climate. Thus, fiscal space is vital in emerging economies, which by definition do not issue reserve currency; these economies need proper "buffers", especially in times of great uncertainty and slightly changing financial markets. The Romanian Leu is not reserve currency, and the National Bank of Romania does not have room for manoeuvre as some large central banks do. For these reasons, imbalances must be a serious concern for us in order to avoid failure in terms of financial stability, sovereign risk assessment, financing and economic dynamics.

One must consider that public debt is at reasonable level (about 35% of the Gross Domestic Product in 2018, according to the European Union methodology); yet the increase of the "twin

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deficits" over recent years, especially the external one (the current account deficit will probably exceed 5% of the Gross Domestic Product in 2020), with a structure in financing decrease, highlights Romania in comparison with other member states in the region; a correction seems to be significant in preparing the fiscal and budget strategy.

Mass departure from national economy borders as well as the increased lack of labour force create additional pressure, which leads to wage increases in order to diminish the phenomenon. If this reality is not considered, excessive external imbalances add up, irrespective of the national economic situation; thus important adjustments will be required when the international environment becomes unfavourable. Therefore, one must acknowledge that income increase should be decided only based on elements such as productivity and economic competitiveness.

Increasing the Quality of Fiscal Information

An increased quality of fiscal information may be achieved by a higher clarity of the tax base, reducing as much as possible the situations and possibilities of subjective interpretation of tax legislation by reassessing the tax and fee system in terms of maintaining some taxes, fees and contributions and their amount. The amount of the flat rate tax should be considered, especially as Romania has one of the lowest ones compared to other member states in the European Union.

There are researchers according to which there is a high level of inequality in Romania resulting from unfavourable employment structure and wage policy. It is necessary that the inequality index be lowered to values similar to the European average, by correcting these situations; the researchers' opinions are presented in a Romanian Academy report entitled "The Development Strategy of Romania in The Next 20 Years"[5]. It is also considered that Romania has been facing poverty during the transition period, which seems to be affecting in one form or another half of the population. The boom of poverty was generated by the decrease of wage opportunities, insecure employment, and low incomes. The report includes some internal opportunities, such as "*improving the quality of public finance management by intensifying the fight against corruption and tax evasion*".

Therefore, decision makers will have to promote mixed macroeconomic policies necessary to protect the balance. They will have to consider the medium and long term interests of the Romanian economy to avoid circumstantial measures without motivation based on reality, or counterproductive measures. Long term policies need to be designed so as to avoid sudden changes and be sustainable.

These elements are important not only to manage the current economic situation, but they must also lead to the achievement of more important objectives concerning deficit reduction in order to enable access to the Exchange Rate Mechanism - ERM2 and the adoption of the Euro currency.

Rigorous state control definitely contributes to the increase of tax revenues especially if we consider the underfunding of basic public goods in some areas of the economy such as education, health, basic infrastructure.

Efficient state control contributes to increase the quality of fiscal information; it helps increase incomes (by properly substantiating decisions to increase rates, the efficiency of collection, introduction of methods to reduce subjectivism in the fiscal apparatus by means of information technology, active combat of tax evasion and fiscal "optimization"); it may also concern an adjustment of public spending by firmly promoting the principle of efficiency.

Thus an efficient state control may contribute to reducing tax evasion and "optimization", increasing the quality of fiscal information for decision-makers, but it can also make an important contribution to substantiating the need for ample corrections of the consolidated budget.

Political decision-makers have often played an important role in the adoption of public policies in economic, social and control areas of the state, with increasingly varied effects.

[5] The Report may be accessed at https://acad.ro/bdar/strategiaAR/doc11/Strategia.pdf

On the contrary, largely unsatisfactory control may lead to an important issue, as the adjustments will have to be made without knowing enough about the effects on the participants in the economic and social life (economic operators, consumers).

Previous efforts were a difficult process, largely focused on institutional construction, but in the following period it appears necessary to promote the social, economic and political interests of Romania, and continue the efforts with greater force.

An important contribution of the state financial control may be promoting professional honesty, assessing design and implementation of fiscal and budgetary policies, the relationship with other components of economic policy.

Increasing the quality of fiscal information may be achieved by acknowledging the rules of economic policy. Rules are needed because discretionary decisions are not optimal; they are inconsistent, as proved by the literature concerning "deficit bias" (Barro, Gordon, 1983).
The importance of rules in economic policy needs to be acknowledged

- -from a temporal point of view (Persson, Svensson,1989), regarding the time horizon – the focus is on short term objectives rather than on long term ones
- -from the point of view of decision makers' objectives, which are different from the general objectives of the society (Rogoff, Kenneth, 1990) due to reasons concerning:
  - -different assumed interests (choices) or
  - -promoting the interests of some groups which do not comprehend the impact of their implementation - "common pool problem"

Both have as result the improper use of the deficit and/or public debt in order to

- - achieve short time benefits and/or
- - limit the opponents' room for manoeuvre, especially the political enemies (Alesina, Tabellini, 1990).

The adoption of fiscal rules represent a solution to solve the issues listed above, mainly along with the discipline imposed by markets (Leiner-Killinger, Nerlich 2019).

A fiscal rule imposes a permanent constraint of the fiscal and budgetary policy by numerical limits applicable to the fiscal and budgetary aggregates which, once reached, lead to alterations of the fiscal and budgetary policies.

The purpose of the fiscal rules is to control the pressure so as to increase the deficit and / or public debt, to ensure fiscal responsibility and the sustainability of the public debt (Guerguil, 2013).

Fiscal rules may be classified into four categories:

- -rules on public debts,
  - ○A rule at the constitutional level and at the level of public finances law (from 1999, 2014) which specifies a limit of public debt of maximum 60% of Gross Domestic Product. It sets up corrective actions at levels of 50, 55 and 60% of Gross Domestic Product (Poland)
  - ○as of 2019 a new rule regarding the maximum level of the consolidated public debt (ESA 2010) was set up at 35% of Gross Domestic Product, possibly to compensate for the relaxation of the rule regarding deficit (Sweden),
- -rules on the budget balance (possibly adjusted periodically or adjusted periodically and with temporary measures - structural balance),
  - ○Rule regarding a budget surplus, on average, throughout the business cycle, of 1⁄3% of Gross Domestic Product; the existing surplus was 2% of Gross Domestic Product between 2000-2007 and 1% of Gross Domestic Product between 2007-2019 (Sweden).
- -rules on public expenditure,
  - ○The Budgetary Control Act (2011) set up the limits on discretionary spending for the fiscal years 2012-2021 (some categories of expenses are exempted: emergency/disaster, war, integrity programs, and fires). However legislative changes between 2014-2019 raised the limits previously imposed (United States of America),
  - ○rule / maximum limit on the nominal public expenditure (set up since 1997) of the central government and the pension system with a time horizon/the following 3 years, the target value for the last year out of these 3 (following) years being added / set annually (Sweden).

-rule on public income

- Rule regarding the automatic allocation of the unexpected / unanticipated / non-programmed income of the central budget and of the pension system for certain destinations (France).

Fiscal rules in the Eurozone (but also in the European Union) are objectively needed both for the reasons which the economic theory in the fiscal field proves valid and for the fact that monetary union implies coordination of national fiscal policies, as well as a fiscal instrument at the central level (with main functions related to economic stabilization and ensuring debt sustainability (Leiner-Killinger, Nerlich 2019).

The specificities of the Eurozone and the Economic and Monetary Union (from a fiscal perspective) also relate to Robert Mundell's theory set forth in 1960 and regarding optimal monetary areas (Andrews, Henning, Pauly 2002).

The European fiscal rules are complex - the result of a challenging history (Andrews, Henning, Pauly 2002), the economic logic (economic analysis) within it being frequently replaced by considerations which rather take into account the political logic.

The European fiscal rules consist mainly of the following documents:

a. Treaty on European Union (TFEU) and Protocol No. 12,
b. The Stability and Growth Pact (SGP):
    (i) Council Regulation (EC) no. 1466/975 (”the preventive arm") and
    (ii) Council Regulation (EC) no. 1467/976 (”the corrective arm")
c. "Six-Pack" regulations (fiscal supervision and coordination / Excessive Deficit Procedures (EDP) / rules application / fiscal framework / Macroeconomic Imbalance Procedure (MIP)) and
d. "Two-Pack" regulations (DBP + Excessive Deficit Procedures (EDP)/fiscal-financial stability).

The fiscal regulations codified in this legislation (Andrews, Henning, Pauly 2002) mainly concern:

a. under the preventive arm:
    (i) rule on structural deficit - convergence to medium-term objective (MTO) + SDP,
    (ii) rule on the rate of growth of expenditure (net discretionary expenditure)
b. under the corrective arm:
    (i) rule on maximum deficit level (3%)
    (ii) rule on the maximum level of public debt (60%).

The complexity of European fiscal rules and their relatively limited success have led to reform initiatives (Leiner-Killinger, Nerlich 2019),[6] which include:

a. Increasing the consistency of the rules (deficit - debt - MTO; e.g.3/5/60 vs. 1¾/4/3/60 or MTO -1⁄20 debt dev. tgt.);
b. Reducing their complexity - which would also limit "flexibility" in implementation
c. Avoiding the pro-cyclicality of rules (e.g. caused by the uncertainty of determining excess demand) - emphasis on expenditure rule (partial solution);
d. Increasing the importance given to sustainability of public debt, in particular, and to the quality of public finances - in contrast to the current emphasis placed on the stabilization function throughout the economic / business cycle;
e. The use of rewards as well, not only of penalties for failure to meet fiscal objectives and possibly safeguard clauses;

[6] European Fiscal Board, (2019), Assessment of EU fiscal rules with a focus on the six and two-pack legislation, European Fiscal Board Report, August 2019.

f. Clarification of the role of national fiscal policies and of the Eurozone aggregate one in exceptional situations (mainly the role of automatic stabilizers and the distribution of fiscal / monetary policies in boom / recession);
g. Establishing a central fiscal capacity of the Eurozone (for "public risk sharing" / stabilization fund in the medium term);
h. Encouraging / promoting investments - also achievable by a variant of the "golden rule".

At national level, Law no. 69/2010 on fiscal and budgetary responsibility is mutatis mutandis the implementation of the relevant European rules in Romania, with some simplifications but also with some (related) national rules. Thus:

a. under the preventive arm:
    i. there is the rule on structural deficit - Article 7, 14
    ii. as well as rules on (the increase rate of) expenditure - Article 12c) and 12d)
b. under the corrective arm:
    i. there is the rule on the maxim level of deficit (3%) - Article 6
    ii. and the rule on the maximum level of public debt (60%) - Article 6, 9, 10, 13.

The importance of state financial control in terms of rule and legislation compliance seems to be very important; it leads to an increased quality of fiscal information and not only; it contributes to the reduction of tax evasion as well. Thus the premises are created in order to achieve higher public revenues necessary to increase the financing of basic public goods in some areas of the economy such as education, health, basic infrastructure. If the state financial control also concerns expenditure and administration of the public and private patrimony, then more ambitious decisions can be achieved, such as reducing corruption which, as noticed, is at a high level.

Conclusions and proposals

The events of the last years have shown objectively some deficiencies in the functioning of political leadership: the boom of public awareness concerning corruption, which has existed from the beginning at informal level. Analyses argue that the transition state has a distinct profile, characterized by the fact that it also represents a mechanism for its exploitation by interest groups, with a high tolerance for all forms of corruption. Characterization such as feudal state, captive state, etc. are used in literature. Alongside corruption, there is a concern that we are affected by the fast process of bureaucracy, which blocks the efficient functioning of society.

Fiscal rules are used increasingly (at international and European level) to align decisions with the objectives of debt sustainability / stabilizing the economy. At European level, fiscal rules are complex and they are undergoing reform / simplification, in order to alleviate recently found dysfunctions which concern a more thorough integration in the Economic and Monetary Union, the current rules being also adopted in Romania, where some related national rules have been added. The rules applied in Romania seem to lead to mixed results; thus, the function of stabilizing the economy seems not to be addressed by the fiscal policy, and that of maintaining the fiscal and budgetary balance - the deficit - under the Maastricht threshold seems to have the constant decrease of public sector (expenditure) as a sine qua non a condition. This points to the need for structural changes in fiscal policy, in the sense of efficiency gains and of a trend to consolidate exclusively by expenditure reduction; it also compensates for the lack of performance in scheduling and collecting revenue. Moreover, multiannual budget programming and increasing the efficiency of both revenue collection and public expenditure seem to be solutions with great potential. Rules and the way of exercising state financial control are very important in order to supervise compliance especially by ensuring the increase of the quality of fiscal information and the reduction of the economy and tax evasion are very important. Thus the fiscal space necessary both for the stabilization function of the economy and for ensuring the sustainability of public debt can be rebuilt.

The exclusive focus on the procedures for the awarding of public programs together with the low attention given to the assessment of their efficiency has important distorting effects.

I propose research and assessment of a previous period of about 30 years concerning the role of the political decision on the economic evolution of Romania in order to understand what is best to do in the following period.

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UNIVERSAL BASIC INCOME, POSSIBLE ECONOMIC POLICY INSTRUMENT REGARDING LABOUR MARKET

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Abstract:

The study addresses the possible effects of the implementation of the basic universal income on the balance between the demand and the supply of work, in the context of the fourth industrial revolution. Highlighting the economic growth determined by the technological evolution, questions are asked about the income inequalities and the implications on the labour market. Obviously, as an economic policy instrument the basic universal income establishes a direct causal relation with the standard of living of the human being, but it eliminates the causal relation between income and work, which implies a clear distinction from the minimum guaranteed income, the minimum guaranteed wage. The distinct conditions imposed by objectives, potential beneficiaries, institutional and financing mechanisms are highlighted, which determines different economic and social impact on the labour market.

Keywords: *universal basic income, economic policies, labour market, income, wage*

JEL classification: *I3, J17, H53*

Introduction

The purpose of this presentation is to bring to the attention a concept that becomes of interest, a challenge for economic and social policies. I want to draw attention, perhaps even initiate a debate on the Universal Basic Income (UBI) base as a policy instrument for the labour market. It is not a comprehensive scientific study of all current problems, rather an introduction to research into a possible revolutionary social change, correlated with the fourth technological revolution. In terms of economic growth, income inequality and the possible effects of the labour market, two important issues need to be taken into account. Basic universal income establishes a *direct causal relationship with human life.*

Work brings new dimensions: a competition between technological development and the development of new skills (new knowledge, skills and attitudes) through education, *controversies about national minimum wages and their change*, illusions of aid and social assistance, new indicator systems, access to health , inequality of earnings and non-recovery of gaps, and so on. As a possible solution to all these and other labor market issues, employment, unemployment, new forms of work, job insecurity, wage inequality, social dialogue, could be the Universal Basic Income (UBI).

Description of the problems that justify interest for UBI

The revolutionary aspect comes from eliminating economic and legal causation between income and labor. Its global implementation or even a differentiated implementation at the level of all states would require new ways of individual thinking, new systems of economic and social thinking, new institutions or even state. So far, some approaches to the concept are known, especially in the form of a social experiment, different in size and coverage that keeps the attention of researchers and theorists, as well as the governors.

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Automation

Future of work is future of robots, of artificial intelligence, and of diverse disruptions created by the 4th Industrial Revolution. The idea that “machines are coming to take our jobs” has been an ancient concern, maybe for hundreds of years, since the first technological leap that both raised productivity and fears that thousands of workers would be thrown out on the streets. Now, we know that innovations and technological progress have caused disruption, but they have created more prosperity than they have destroyed. Also, today, we are riding a new wave of uncertainty as the pace of innovation continues to accelerate. Seems that technology affects every part of our lives in our days, automation and globalization effect employment .As far as technological development is concerned, new skills are needed that a person can acquire if education would not provide the right knowledge to previous generations and not to today's children. Hence the impression that the main factor of equilibrium or breakthrough on the labour market is this race between new and innovative technologies and appropriate education. Our own conviction is that future jobs will be modeled, but not eliminated by technical progress. Picture no1 reflects how the forces of automation will shape employment.

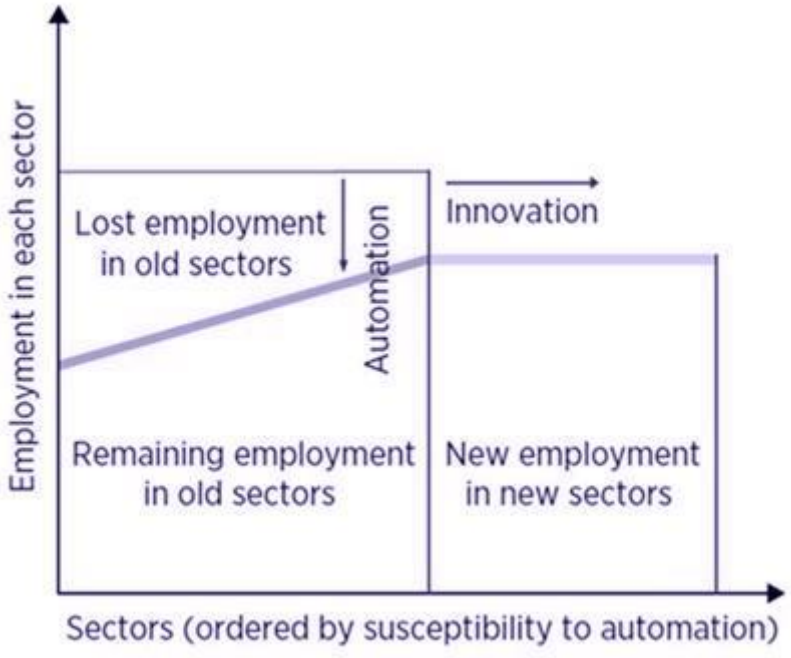

Figure1 - Employment and automation

Source: after Glaeser (2018)

In the future, innovation will continue to accelerate, and policy maker will need to take rapid decisions and do actions to ensure that economies of countries can compete in the economy of the future. They urgently will have to invest in their people especially in health and education, which are the building blocks of human capital. Only in these ways we will could to harness the benefits of technology and to blunt its worst disruptions. But right now, too many countries are not making these critical investments. Many children currently in primary school will work in jobs as adults that do not even exist today. The current technological revolution is undoubtedly disruptive to the labour market and, although it can accelerate economic growth, will continue to exacerbate inequalities, including labor incomes. UBI would lead to broader wage sharing and widen access to education.

Economic precariousness

Economic precariousness of the individual mean lack of job security, non-assurance of transition from one job to another, instability of income and lack of predictability. Maslow explaining the Pyramid of Necessity says that immediately after fulfilling basic physiological needs (food and shelter) needs to be met (the need to know that even tomorrow can satisfy hunger and a roof is provided), even before they belong and love.

Reflecting on the characteristics of man and his everyday life, some risks can be identified:
• Dumbbell (Temporary work incapacity = sick leave, medical care, long-term incapacity for work (invalidity) = temporary sickness retirement, definitive incapacity (disabled) = retirement from permanent illness)
• Unemployment
• Accident or occupational disease
• Maternity
• Responsibility for family care „Government actions to support investment in human capital go well beyond spending on health, education, and social protection programs. In Nepal, investments in sanitation are contributing significantly to preventing anemia. Housing programs improve the education and labor market outcomes of the most disadvantaged by changing the quality of the peers with whom they interact. The earlier children are exposed to better-off neighbors, the stronger are the effects." [8]
• Aging
• Death of the legal supporter
Covering these risks is a matter of personal security and resolves through social security policies through social benefits. Ensuring employee security comes under his responsibility, but also to the employer and the state.
John Rawls includes free time on the list of basic needs. Freelancers are a form of showing the need for free time without giving up work, but whose income instability is high.
In European Union, the introduction of a guaranteed minimum income scheme shall be governed at Member State level by Council Recommendation 92/441/EEC of 24 June 1992 on common criteria to ensure an adequate level of resources and social assistance through social protection systems.
Could UBI be the guarantor of full coverage of basic, physiological security and free time needs, and increase the possibility of advancement to development?

Poverty

In this world where living standards are on the rise, poor people are increasingly at the center of society in any world economy, as statistics show. Poverty (the poverty trap, the welfare state's inability to remove poverty, debts) and the relative poverty line are constantly in the attention of economists and governors.
The poverty threshold is used to determine benefits and subsidies as an eligibility standard, but not being updated in line with developments in global economies does not determine a satisfactory or at least decent standard of living, so it remains a still open problem.
The risk rate of poverty and social exclusion (AROPE) is an indicator involving the verification of the population's situation relating to: poverty threshold (60% of the median disposable income per adult-equivalent) severe material deprivation reduced work intensity.
The AROPE shall reflect the proportion of the total population, those in at least one of the three situations mentioned. AROPE, indicates in 2017 112.8 million people living at risk of poverty and social exclusion, representing a high percentage of 22.4% of the entire EU population -28. Figure 2 shows the evolution of low labour intensity in Romania and the EU on the data available at EUROSTAT.

[8] *WDR- World Development Report – World BANK, 2019, page 53*

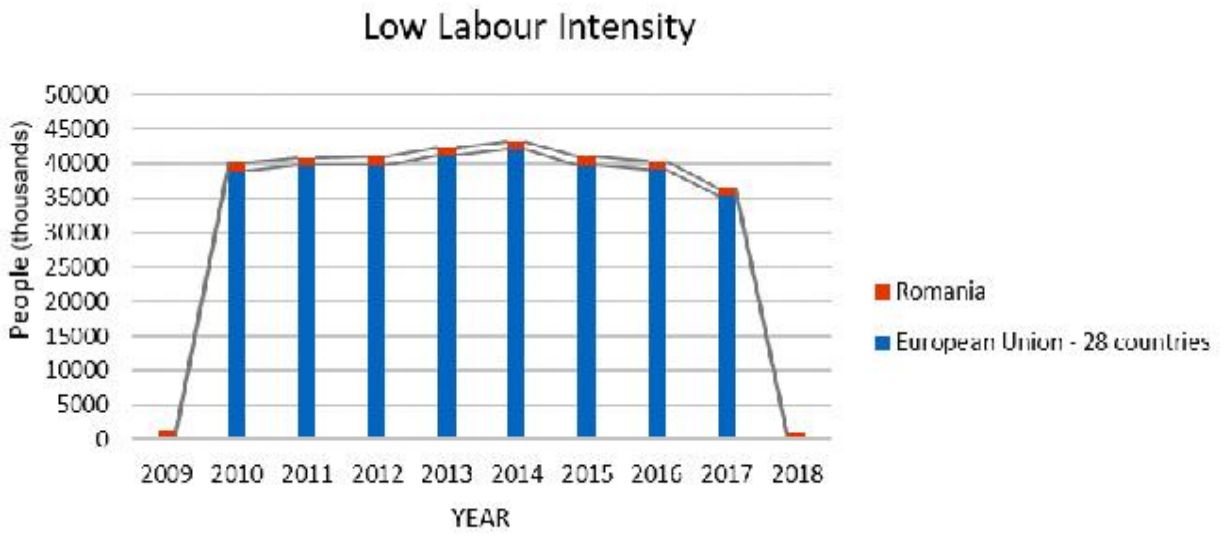

Figure 2 – Risk of poverty

Source: the author's processing Eurostat

In calculating the indicator as shown in the figure, the total number of months of the reference year in which working-age workers (18-60 years) obtained work-age income (18-60 years), not including young people aged 18-24 years who are a form of education. Full-time fractions of work are estimated by full-time equivalent terms. The figure sees a slight decrease in 2017 compared to 2016, but not enough to support the level proposed by the 2020 Strategy EU. Poverty means the lack of resources needed for a decent life, unemployment means the impossibility of obtaining resources for a decent living, so the poor are unproductive for society, and generous social assistance will discourage their employment in and the cycle resumes, without reducing inequality, we face an adverse positive feedback effect if we judge from a work point of view. Poverty reduction to the level set as an objective and exit from that loop certainly requires changes in the establishment of wage income policies, the tax system, protection and protection in the decision-makers' agenda social security, green jobs, etc. UBI may not be able to eliminate people's debt, not succeed in eradicating poverty, but can draw attention to the re-establishment of the poverty line and the level people think it should have. The poverty line is used to establish benefits and grants as an eligibility standard but is not upgraded in line with developments in global economies does not determine a satisfactory or at least decent living standard, so it remains an open problem.

Inequality

Inequality is expressed by increasing disparities in income and wealth and lack of perspective on the recovery of gaps. Income taxes are the essence of revenue policy, and progressive income taxing is a permanent controversy between the political and left right, reliant on redistribution and social transfers. UBI can trigger a new revenue sharing system that does not distort the market economy.

Stress

The perceptive perspective of work appeals the affective (emotional, unconscious) „device" of the individual. The perceptive perspective is shared by employer and employee but, since it convokes especially the subjectivity, it is presented rather associated with the employee. According to recent developments in the cognitive psychology and in neuroscience, it seems the non-rational (or, more exactly, the unconsciousness) is faster in taking decisions and initiating actions than the rationality. For these studies two Nobel prizes have already been awarded (Daniel Kahneman, and Richard Thaler). Based on these results, the perceptive perspective on the work is of a great importance for understanding the behaviour on the labour market and, consequently, in administering (especially from the public policy side) this market.

We already know that the employee (human capital) has the following characteristics has a long cycle of training (until he reaches the legal age for work) and of consumption (until he is retired or retired from the active population, generating job offers); is trained and to be instructed or self-instructing the whole life (up to certain levels that influence how he can respond to a job request or to the levels of self-development that correspond to the higher levels in Maslow's pyramid and is consumable (perishable and finished depending on the state of health and age)

”Interventions to improve learning and skills should place a greater emphasis on the areas of the brain that are the most malleable over the life course. Children’s brains are most efficient at incorporating new information through exploration, play, and interactions with caring adults or peers. Because of this receptivity, preschool programs should concentrate on building foundational skills through developmentally appropriate program structures that emphasize play and interaction. Although foundational cognitive skills become less malleable after age 10, some areas associated with socio-emotional development remain highly malleable through early adulthood. Accordingly, interventions that aim to improve the school-to-work transition, as well as social inclusion for youth with weak foundational skills, may prove most effective when they emphasize socio-emotional skills.
Finally, intense stress or sustained negative emotions—such as those associated with crises or acute deprivation, where multiple stressors coexist interfere with the brain’s ability to learn, retain, and use information. Extended exposure to stressors is toxic for biological systems, particularly for developing brains, and it may impede disadvantaged children from flourishing in the classroom (on the effects of poverty). Consequently, programs that increase the availability of protective factors to shelter children from stress (such as nurturing care from at least one meaningful relationship that teaches children how to cope) can improve not only schooling, but also overall life outcomes.” (The biology of learning)

Stress at work is a stigma with implications in labor productivity, motivation and health (unemployed and shame of stigmatization, prejudices and exclusion, feelings of inappropriateness even declare physical and mental illness, suicidal tendencies.

Here are some less visible but relevant aspects of job security, and I refer to work stress, daily stress, physical and mental exhaustion, harassment, aggression, lack of satisfaction, lowering self-confidence, anxiety and depression. Perhaps UBI will not cure what we can already call a stress pandemic, but it would help reduce intensity and incidence.

Evolution of the environment

Sustainable development implies, alongside the social and economic pillar, the pillar called ECOSISTEM and we can agree that all environmental issues will impact human evolution. The advancement of the technique leads to increases in production by default, to pollution. The ability of the environment to absorb pollution is reduced, so a sustainable approach must solve the problem of this balance.
The economy of the environment represents a challenge for the theory of sustainability insofar as it proposes an intervention in the economy, in the sense of humanizing and ecologizing the economy. The main problem is that of integrating the environment and its problems into the structure and philosophy of economic theory. It is a difficult task that derives from the inertia of a theoretical system, doctoral, academic, super-formalized, but detached from reality. Conversely, there are limits to the theory of concreteness of environmental phenomenology. The Nobel Prize for Economics in 2018 was presented for contributions that present fundamental perspectives on the causes and consequences of technological innovation and climate change.[9]

[9] *In 2018, the prize was equally divided between William D. Nordhaus "for integrating climate change into long-term macroeconomic analysis" and Paul M. Romer "for integrating technological innovations into long-term macroeconomic analysis".*

Methodology and data examined in different experience of the UBI

The methodology used in conducting the study consists of:

- Logical, institutional, procedural and behavioral analysis

- Statistical analysis and empirical experience, including the methodology provided by the Canadian Center for Policy Alternatives (CCPA), the living wage calculated for Revelstoke[10]

- Qualitative analysis, we began with a description of the genesis and character of the living wage phenomenon as presented in the existing literature.

Finland was the first European country to attempt an unconditional basic income through a two-year pilot project that started in January 2017; the unemployment rate was 9.2% - higher than among its northern neighbors. 2,000 participants - all unemployed - were randomly selected, but the government refused to supplement the funding, and the experiment will not be extended later this year, as the government is now examining other systems for reforming the Finnish social security system.

Another reform option considered by Finnish politicians is the negative income tax, meaning that people whose incomes fell below a certain threshold would be exempt from income tax and would receive state money.

A study by the Organization for Economic Cooperation and Development said that the income tax should increase by almost 30% to finance a basic income. He also argued that basic incomes would increase income inequality and raise the poverty rate, for example in Finland from 11.4% to 14.1%. Instead, the OECD said that universal credit could reduce the poverty rate to 9.7%, but that it would reduce it the complexity of the benefits system.

In 2016, a monthly income of 2,500 Swiss francs for adults and 625 Swiss francs for each child was proposed in Switzerland, but Swiss voters overwhelmingly rejected the proposal to introduce a guaranteed basic income for all.

The UK's campaign for a Living Wage was launched in 2001 in the East End of London. The objective of the campaign was simple – to persuade employers to pay wages that supported a decent standard of living.

Since 2011, when the system of accreditation began, more than 3000 employers have signed up to the Living Wage, who collectively employs approximately 1.35 million people, about 4.3 per cent of total UK employment. According to the most recent estimate, 150,000 workers have benefited directly from the spread of Living Wage accreditation, receiving a welcome boost to low-wage incomes.

The model Revelstoke requires wage distribution data in order to track the magnitude of wage changes needed to bring the lowest wages in line with the living wage. The model was unable to incorporate gender explicitly. The living wage calculation methodology is itself based on a two-income household, and cannot therefore address the underlying gendered aspects of poverty completely.

In case of Revelstoke, were proceeded to estimate the impacts on profits for each sector in economy. To do this, they work with an estimate of the wage costs. Table 1 lists ten steps in calculating the impacts of increasing the wage costs on profits.

[10] *The CCPA methodology can be found at https://www.policyalternatives.ca/livingwage2016; the calculation itself was undertaken by collaborators in the Revelstoke Community Social Development Committee (Zacharias and Lenzi 2015).*

Table 1

Revelstoke algorithm

Description of steps of algorithm	Results
Multiply employment share by total workforce.	Employees in sector
Multiply sector employees by sector share in wage categories	Employees by wage category for sector
Multiply employees by wage category by midpoint of category	Total wages paid by category by sector
Sum wages across wage categories for each sector	Total wage bill by sector
Divide by estimate of labour cost as share of revenue	Total revenue by sector
Multiply total revenue by costs as share of revenue and subtract from total revenue	Total profit by sector
Multiply bottom increment employees by wage increment needed to satisfy living wage.	Wage bill increment
Add to total wage bill for sector	Adjusted total wage bill
Deduct wage bill increment from total profit	Simple profit impact of living wage
Subtract labour cost share from expenditure share	Non-labour cost share
Multiply by fixed cost share of non-labour costs and subtract from non-labour costs	Fixed costs and variable co

Source: adapting by Carlaw, K. (2016)

Using the existing data, calculations indicate the likely effect of a living wage on the total Revelstoke labour costs to be relatively minor overall, but potentially very disruptive to particular sectors and firms. These disruptions are potentially mitigated by increases in prices, productivity, and consumption, but the firm by firm or sector by sector calculation of the economic and social impacts require too many assumptions to be helpful.

Results

1. The synthetic and logical **definition of UBI is income that covers the basic needs of a person**, paid individually, to all people.

The accepted definition in literature or scientific and empirical studies is that of financial income to cover the basic needs of a person, paid individually, to all citizens of a state.

The characteristics or criteria necessary to define the basic universal income are:
- Universality "UBI is assured to all people"
- Legitimacy "The right to UBI is given by living human life"
- Individualization "UBI belongs to the individual, without influence from his social relations (of couple, family, household)"
- Non-conditioning "UBI rejects the condition of any kind"

- Automation "UBI automatically rolls on a regular bank account"
- Definitive "UBI is absolute and irrevocable"

2. We need **new ways to invest in people and to protect them,** regardless of their employment status. Yet four out of five people in developing countries have never known what it means to live with social protection. With 2 billion people already working in the informal sector unprotected by stable wage employment, social safety nets, or the benefits of education, new working patterns are adding to a dilemma that predates the latest innovations.

Governments will need to take better care of their citizens, enacting universal, guaranteed minimum levels of social protection. It can be done with the right reforms, such as ending unhelpful subsidies, improving labor market regulations, and, globally, overhauling taxation policies. Investing in human capital is not just a concern for ministers of health and education; it should also be a top priority for heads of state and ministers of finance.

Figure 3- Social Protection

Source: *WDR (2019)*

The Figure 3 shows that only social protection included in the labour regulation can manage labour market challenges.

Conclusions

1. Social Protection programs have little effect on long-term health and education outcomes. Adjusting to the changing nature of work also requires rethinking the social contract.
2. Change and improvements can only come from individual choices. I argued from the labour market point of view. The employee is an individual who has his own will, conscience, motivation, and interests that shape his economic behavior and decision making. An analysis of the individual as a human subject is probably more appropriate to the scientific research of psychology or philosophy. It can be seen that man creates, adapts, innovates, performs, that is, is flexible in shapes his behavior. A various factors t influences their decision-making.
3. It must be a mix of policies such as social protection and assistant programs, health and well-

being, early education and longlife learning in addition to other policies, such as fiscal, monetary, budgetary, environmental, commercial, other policies. The solutions that we suggest by this mix of policies are:

-Use UBI to enhance social protection, to ensure universal coverage and protection that not depend on having a wage employment

-Upgrading taxation systems, provide fiscal space to finance human capital development and social protection

-Invest in human capital to develop the new skills that are increasingly in demand in the labour market

Future Directions

I think that a possible solution for achieving balance and demonstrating the sustainability of work in future is represented by flexicurity. I will finally define flexicurity as a mix of labor market policies, in line with the Europe 2020 Strategy and the 2030 Sustainable Development Agenda.

In the harmonization between the two aspects, the one of flexibility and the one of security, the employees, employers, the whole society and the real economy are involved. The realities of the global economy impose and support it, and as a policy on the balance of the labour market flexicurity reflects the European vision of sustainable development. The European policy (social model policy) on labour and the right to work emphasizes individual well-being, poverty eradication and social inclusion, so that flexicurity becomes a pillar of European social policy, an instrument of sustainable economic growth, determining and developing its own political components, as mentioned in the introduction, respectively:

- Flexible and reliable (secure) contractual arrangements (CFS)
- Lifelong learning strategies (LLL)
- Active (efficient) labor policies (PA)
- **Modern social security systems and good mobility (SSM), where UBI belong.**

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EVALUATION OF THE CRITERIA FOR DETERMINING THE MEDIUM-TERM BUDGETARY OBJECTIVE

Ph.D. Ionel LEONIDA[11]

Abstract:

The objective of this paper is to evaluate the criteria for determining the medium-term budgetary objective. In this respect, the criteria of institutional, economic and behavioral nature will be evaluated. The association of the criteria with the determinants of the medium-term budgetary objective will be done as follows: the component regarding the cost of population aging over a time horizon, we consider it the determinant of institutional nature; The potential Gross Domestic Product is considered the determining factor of economic nature, this being an important indicator in determining the medium-term budgetary objective - the structural deficit - in determining the production gap, but also with other "responsibilities"; we associate the public debt with the behavioral determinant, which is an indicator in which the historical budgetary behavior of a Member State is observed. Based on the evaluation of these criteria, strengths and vulnerabilities of the framework for determining the medium-term budgetary objective will be presented.

Keywords*: public debt, budget deficit, fiscal consolidation, medium-term budgetary objective*

JEL Classification*: H22, H26, H62*

Introduction

The reform of the Stability and Growth Pact (SGP) of 2005 introduced a number of relevant changes, both in the preventive and corrective components. Thus, in the preventive component, the medium-term budgetary objective has been redefined as a tool for budgetary and economic surveillance, and has been incorporated in the national convergence programs, thus being subjected to the European Commission (EC) evaluation.

By redefining, it has been established that this can be specific to each state, depending on the national financial and macroeconomic conditions and taking into account the risks on the sustainability of public finances in the long term. The general criteria for determining the redefined medium-term budgetary objective were approved by the Council of the European Union (CUE), and were aimed at taking into account public debt, potential output growth and a safety margin with respect to the budget deficit limit of 3% of Gross Domestic Product (GDP). The reform of the SGP did not provide a well-defined rule or methodology for the implementation of the criteria of determination, thus leaving a certain freedom of analysis and interpretation of each Member State in establishing the level of the medium-term budgetary objective, which represented a potential flaw on the general credibility of the fiscal framework of the European Union (EU). Since 2009, the EC and the Member States have developed a code of conduct with specifications on the implementation of the SGP and guides on the format and content of the stability and convergence programs, developing a methodology for calculating the medium-term budgetary objective through which the determination criteria have become operational.

The methodology includes aspects regarding the public debt collection, the potential economic growth and some margins of budgetary security, but also perspectives on (the increase) the expenses with social insurances. Two new features are incorporated in the quantitative determination of the medium-term budgetary objective: an additional effort to reduce public debt specific to Member States whose ratio of public debt / GDP exceeds 60%, which promotes

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convergence towards a prudent ratio of endowment in GDP, and a partial anticipated burden of social insurance costs over a period of time, which aims to partially cover future increases in this category of spending.

Based on this methodology, a number of 15 Member States have calculated and declared their medium-term budgetary objectives, but neither the EC nor the respective countries have released the specific work algorithm for the general calculation.

The effects of the financial and economic crisis were manifested by the deterioration of public finances, their sustainability, in most EU Member States. Against this background, Member States were required to design fiscal strategies to correct the created imbalances, but also to temper the expansive nature of the fiscal policies implemented. In this context, the medium-term budgetary objective plays an important role in supporting the fiscal strategies of the Member States, under the coordination and monitoring of the EC, being a formal and explicit constraint of the fiscal policy regarding the results and the medium-term budgetary perspectives, tempering the character procyclic, improving the aspects related to the high level of indebtedness in correlation with the protection of social insurance expenses.

Evaluation of the criteria for determining the medium-term budgetary objective

In line with the objective assumed for this paper, we will evaluate the criteria for determining the medium-term budgetary objective, respectively of an institutional, economic and behavioral nature, in order to identify possible strengths and the vulnerability of the framework for determining the medium-term budgetary objective.

The criterion of institutional nature

We consider the component regarding the cost of aging of the population over a time horizon, the determinant of institutional nature, to argue this option.

Pensions are the main source of income for the elderly in the EU and they come mainly from public redistributive systems. There are approx. 130 million pensioners and represents a growing group, and the pension systems face a double challenge, namely to maintain their financial sustainability and to be able to ensure adequate incomes.

The main objectives of social insurance policies are: (i) ensuring adequate income; (ii) ensuring financial sustainability; (iii) employment for an extended period of time. The intensification of the aging process of the population over the next 30 to 50 years will amplify the challenge of achieving the three objectives in several major ways, such as:

- Adequacy of pensions, measurable by their ability to prevent poverty; the proportion in which they replace the income from professional activities and the length of the period in which they receive a pension;
- Employment, which can be measured by increasing the employment rate of older workers (55-64 years), which would allow them to maintain themselves easier until they reach retirement age and contribute to achieving the overall employment target. 75% for persons between the ages of 20 and 64, set out in the 2020 Europe Strategy;
- Ensuring the sustainability of the pension systems, measurable through the balance between incomes and obligations (and on the ratio between the number of workers / contributors and the number of pensioners / beneficiaries) within the pension systems. To be sustainable in the long run, public pension systems must be able to absorb the impact of the aging process without destabilizing public finances.

In general, the increasingly pronounced reduction of the financial coverage of the needs of public pension systems, as a result of the implementation of reforms[12], has not been correlated with strategies to promote and achieve additional savings, except in those states where the coverage is wide through the systems tradition implemented (Denmark, Finland, the Netherlands and Sweden).

Therefore, the identification of instruments and levers for achieving these objectives and challenges necessary adjustments to public pension systems, is concerned with the strategic field of regulation, of avoiding cyclical fluctuations of an electoral nature, more precisely, of the

[12] *Reforms to mitigate the effects of the financial crisis and / or electoral reforms.*

institutional domain. Public policies (their mix) represent the main anchors in the adequacy of the strategy in this field, and the instruments of fiscal and para fiscal nature (subsidies, obligatory and / or complementary contributions), constitute an important part of the mix of policies, meant to promote safe and secure means. transparent, to achieve the sustainability of pension systems.

Introducing these costs related to the perspective of the public social insurance system for a period of time, in whole or in part (so-called implicit liabilities), in determining the medium-term budgetary objective, is intended to ensure that a margin of budgetary security is obtained, so that, the projected increases in this category of expenditure can be sustained without altering / imbalancing public finances in perspective.

The current methodology for determining the medium-term budgetary objective opted for the partial pre-loading of the growth expected with the social insurance expenses for a period of time, with the establishment of a minimum degree of calculation (0.33), for all the states, in view elimination of arbitrary elections, with the possibility of revising this minimum value.

The contribution of this criterion to ensuring the sustainability objective of public finances, assumed by the medium-term budgetary objective, consists in ensuring the prevention of deterioration of the budget deficits caused by the increase of the expenses related to the public social insurance systems, induced by demographic trends.

The actual algorithm for calculating the value of this institutional determinant, as it was called in this paper, has not been explicitly presented. However, based on the code of conduct, some official publications of the EC[13], we have collected and identified benchmarks regarding the algorithm specification. Thus, we appreciate that the methodological support of this determinant is found in the sustainability indicator S2[14], which indicates the advance adjustment of the current primary balance (in structural terms) necessary to stabilize the public debt / GDP ratio on a horizon, including financing for the increase of the generated expenses. of the aging of the population. The proportion needed to be charged in the methodology of determining the medium-term budgetary objective is at least 33% of the value of spending growth with population aging (calculated as a weighted average of future increases in this category of expenditure, relative to GDP, compared to the initial moment).

The criterion of economic nature

We consider the economic determinant of potential GDP, this being an important indicator in determining the medium-term budgetary objective - of the structural deficit - in determining the output gap, but also with other "responsibilities" in determining the level (evolution) of public expenditures and of the adjustment needed to maintain or converge to a level of public debt ≤ 60% of GDP.

In our assessment, the attribute of economic nature is justified by the fact that this indicator captures, over long time horizons, factors such as: organization of the economy, its productive capacity determined by technology, demographic and educational factors that affect the labor force, etc. There is a generous literature regarding the definition, methodology and critique of potential GDP[15], but there is also an indirect approach to this indicator, by treating other indicators whose calculation relationship is found. In general, there is a common opinion regarding the definition of this concept, with certain nuances, sometimes uneven.

In the reports and studies of the National Bank of Romania (NBR), potential GDP represents the level of real GDP that can be produced by an economy without generating inflationary pressures, whose growth rate can fluctuate over the medium term by temporarily deviating from the term equilibrium value long.

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[13] European Commission (2013 ÷ 2019) "Vade mecum on the Stability and Growth Pact" European Economy; European Commission (2018) "Ageing Report Economic & Budgetary Projections for the 28 EU Member States (2016-2070)", European Economy, Institutional Papers 079; European Commission and Economic and Financial Affairs (2015) "The 2015 Ageing Report Underlying Assumptions and Projection Methodologies", European Economy;European Commission and Economic and Financial Affairs (2017) "Debt Sustainability Monitor", European Economy, Institutional Papers 071.

[14] The difference in sustainability (S2) is the effort that must be made by a state to adjust the stabilization of the public debt / GDP ratio, after including the long-term costs associated with the expenses for social insurance, in relation to the initial budgetary position.

[15] European Commission / Economic and Financial Affairs (2014) "The Production Function Methodology for Calculating Potential Growth Rates & Output Gaps", European Economy, Economic Papers 535.

The Organization for Economic Cooperation and Development (OECD) defines potential GDP as a perspective of the level of output that an economy can achieve at a constant rate of inflation. An economy may also temporarily produce more than its potential level of output, but this effect is that of rising inflation. The potential output depends on the capital stock, the potential labor force (which depends on demographic factors and participation rates), the inflation rate, the non-acceleration of unemployment and the level of labor efficiency.

The National Commission for Strategy and Prognosis (NCSP) in Romania, through the Economic Programming Council, defines potential GDP as an unevenly defined concept, which it considers more "related" to balance (also called GDP of full employment or and is defined as that level of GDP at which all factors of production are fully utilized, ie the labor market and the capital market are in balance. To attract additional workforce, companies should pay higher wages to employees, which would allow them to increase their output, but at higher wage costs. Eventually, this will generate inflationary pressures in the economy and eventually bring it back to full employment.

Potential GDP (according to E, Dinga, 2018[16]) is the macroeconomic indicator that refers to the maximum potential value of the economic product of a national economy, that is, if the production factors available in that national economy are fully utilized. Of course, under normal conditions, this is not possible, which is why potential GDP is used more as a benchmark for calculating significant macroeconomic indicators, such as structural deficit or inflation gap.

We subscribe to the previous definitions regarding the definition of potential GDP, considering that this indicator explains that economic growth under conditions of relative equilibrium, that is to say without pressure on inflation and employment, being an unobservable size, estimated based on statistical indicators, mostly historical, meaning in The following aspects must be considered: estimates must have minimal procyclicality, and revisions on the historical series should be limited.

Methodological aspects

Being a variable that cannot be observed directly from statistical data, potential GDP is a common theme in economists 'concerns, but especially in economists' concerns.

Existing models used to estimate GDP can be divided into two categories:

- univariate models, based on which only the evolution of the real GDP is analyzed;
- multivariate models, based on which several macroeconomic variables are analyzed simultaneously.

Both categories present some difficulties caused by:

- the small size of the used data sample, being uncertain the complete coverage of an economic cycle;
- the late appearance of official statistical data on GDP, compared to the calendar end of the period to which it refers, being often subject to revisions that generate additional uncertainty about potential GDP and require revision as more statistical data becomes available and final.

Individually, each category has its advantages and disadvantages. The univariate models suppose the decomposition of the real GDP, through a statistical analysis of the historical behavior of the data series, based on some assumptions regarding the dynamics of the trend and the gap. Their advantages are that they are not based on implications of particular economic theories, so that the relevance of the result does not depend on the hypotheses of the theory, and they are easy to implement in practice. The disadvantage derives precisely from their univariate character, the possible interactions with other macroeconomic variables not being considered. In addition, the result obtained does not strictly correspond to a precise economic definition of potential GDP.

Multivariate models involve the breakdown of real GDP and the information provided by the evolution of other macroeconomic variables, by analyzing the interdependencies between them and real GDP. The most used multivariate models are based on the production functions, having the advantage that they use a greater amount of information interpreted through the links between variables suggested by the economic theory and the disadvantage that they require longer data series than the univariate methods.

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[16] In the work THEORY STUDIES AND ECONOMIC MODELING. General methodological elements, published in 2018 at the Romanian Academy Publishing House, p 292.

Potential GDP can be determined by several methods, but three of them are more used and we will present them briefly[17], from a qualitative perspective, below.

a. The Kalman Filter - is an analytical model that performs state estimations of a system based on two elements: the immediate previous state of the system and a new entry into the system. The general characteristics of the Kalman Filter can be systematized as follows:
   - mathematically, it is a stochastic model with finite differences;
   - the model should only store the last state of the system, not needing a history of these states;
   - is an adaptive model: any new entry modifies the previous estimation of the state of the system;
   - is a recursive (iterative) model: any estimated state is taken into account as the starting point for a subsequent estimate;
   - is a linear model, which allows the use of relatively simple algebraic operators (such as matrix calculation);
   - Kalman Filter introduces, in fact, a predictor of type;
   - in fact, the Kalman filter isolates the state variation from the process noise;
   - is a univariate model;
   - can also be used in case of statistical models with non-stationary series (because it is able to "extract" a linear trend from those non-stationary series).

b. The Hodrick-Prescott filter - also called the Hodrick-Prescott decomposition and was introduced by Robert J. Hodrick and Edward C. Prescott in 1997 in Postwar US business cycles: an empirical investigation, published in the Journal of Money, Credit, and Banking ". In fact, the design of the Hodrick-Prescott filter is based on the Kalman filter. The general characteristics of the Hodrick-Prescott filter can be systematized as follows:
   - separates the long-term trends (trend) of the system / process examined from the short-term oscillations (cyclical oscillations);
   - from a technical point of view, the sum of the squares of the differences between the trend and the cyclical oscillations is minimized;
   - minimization occurs through a Lagrange type function, with a single Lagrange multiplier, which functions as a (in fact, a constant) trajectory smoothing operator;
   - the exogenous origin of the Lagrange multiplier has the following meaning: it determines how "smooth" we want to be the trajectory of the system / process concerned after eliminating its cyclic oscillations;
   - the restriction of the Lagrange function is the sum of the squares of the differences between two differences of the successive cyclical oscillations;
   - Is a univariate model;
   - the operation of the Hodrick-Prescott filter is operationally similar to a moving average.

c. The Cobb-Douglas function - conceptually, is a type of production function, respectively an analytical (mathematical) operator that transforms an input (an independent or exogenous variable, which can also be a vector type), into the output (dependent or endogenous variable, which can also be a vector type). It was introduced by Charles W. Cobb and Paul H. Douglas in 1928 through the study A Theory of Production, published in the American Economic Review. The general characteristics of the Cobb-Douglas function can be systematized as follows:
   - usually, only two inputs (capital and labor force) are taken into account, but some more analytical versions also consider technical progress;
   - analytically (mathematically), it is a multiplicative operator with elasticities;
   - depending on an analyst's decision, the model can be with constant returns (the sum of the elasticities associated with the inputs is equal to 1), with increasing returns (this sum is subunit) or with decreasing returns (this sum is subunit);

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[17] *Idem 6, pp 295 – 299*.

- the Cobb-Douglas function can also be used as a utility function;
- from a technical point of view, it is a multivariate model;
- assumes a constant elasticity of substitution between inputs (also called production factors);
- is considered a neoclassical economic model, although it seems that more in-depth logical analysis concludes that the Cobb-Douglas type function is not consistent (ie non-contradictory) with the basic assumptions of the neoclassical economic model;
- is a nonlinear model (more precisely, an algebraic power model);
- in the last period have developed (the inevitable) stochastic versions of the Cobb-Douglas type function; the stochastic character is given by the conception of the inputs as functions of the stochastic type.

The European model for evaluating potential GDP

Potential GDP, as noted, is perhaps the most important element of the toolkit for assessing the cyclical position of the economy and its productive capacity, and for the EU it has become essential in the process of fiscal-budgetary oversight through the SGP and the assessment of structural reforms, through SE. To reduce estimation uncertainties as a result of historical reviews and forecasts, there is an Economic Policy Committee (EPC) at EU level, a dedicated working group, the output-gap Working Group, where representatives from all Member States participate, with regular meetings to discuss operational effectiveness, improvement and homogenization of subsidiary methodology and of potential GDP determination.

The determination of the potential GDP, which can be done by statistical methods or by a method based on econometric analysis, requires a number of arbitrary choices, either at the level of parameters (in statistical methods), or in the theoretical approach and the choice of specifications, data and techniques. estimation (in econometric analysis), a situation in which the selection of a method should aim to better adapt to the problem analyzed, with well-defined limits, with the possibility of its implementation / application in all the Member States and with international comparability.

At EU level, the methodology for the determination of potential GDP, based on a Cobb-Douglas production function, was adopted, being considered a method that offers the possibility of examining some economic factors underlying the observed changes and, therefore, the possibility of establishing a significant link between policy reform measures and outcomes. Another argument is that it is able to highlight the close relationship between potential output and "normal" or equilibrium unemployment rates.

Even if the efficiency of this estimation method seems to exceed the assessment of the effectiveness of policies by statistical methods, there are some difficulties in reaching a consensus among the decision makers on the estimation models to be used.

The main operational requirements for approaching the production function method are the following:

- First, it must be a relatively simple and completely transparent methodology, if the key inputs and outputs are clearly delimited;
- Secondly, it must ensure equal treatment for all EU Member States;
- Thirdly, considering that estimates are used for fiscal-budgetary surveillance purposes, it is important to avoid both false optimism and unjustified pessimism. to obtain prudent and impartial projections.

The model for estimating the potential GDP at EU level is developed by the Directorate General for Economic and Financial Affairs (DG ECFIN) and approved at the methodological level by all the Member States, having the highest degree of transparency and the lowest revisions on the historical series in the report. with other models used by prestigious economic and financial institutions and organizations (IMF, OECD). The general estimation framework is based on the Cobb-Douglas production function (even if the Hodrick-Prescott filter is alternatively used), providing fair treatment for Member States.

The behavioral criterion

We consider the determinant of behavioral nature the public debt, this being an indicator in the dimension of which one observes the historical budgetary behavior of a Member State, and

through the constraints of the SGP, this historical behavior becomes an instrument of orientation (constraint) of the behavior in the medium and long term.

Taking it into consideration in determining the medium-term budgetary objective specific to each Member State raised a number of conceptual and methodological uncertainties. They referred to what public debt indicators should be used (stock - flow) and what definition should be adopted (simpler, more complex[18]).

In order to clarify these issues, technical works have been elaborated so that the objective related to the improvement of fiscal sustainability is fully operational and a manual on public deficit and debt (for the implementation of the 2010 SEC methodology), with a view to using a common methodology.

According to them[19], a complete definition of public debt is "public debt means total gross debt at the outstanding nominal value at the end of the year and consolidated between the sectors of public administration".

Returning to the role of the behavioral determinant in establishing the minimum budgetary objectives - the public debt - this can model both the constraints imposed on the budgetary policies of a Member State by evaluating the past budgetary behavior - materialized in the current public debt - as well as those related to future budgetary behavior, evaluated by the impact of the increase of the social expenses on the debt.

The consideration of the current public debt (by the ratio to the GDP), as a behavioral determinant, implies the evaluation against the convergence criterion on the public debt (60% of the GDP) and a distinction between the states with lower and higher levels of the public debt, compared to by the mentioned criterion, thus allowing a different treatment for both situations.

States with levels of public debt, relative to GDP, less than 60%, have a greater leeway in managing public debt, with the possibility of financing some public investment projects.This situation, as well as a slight tendency to increase the level of debt, do not represent immediate threats to national or cross-border macroeconomic stability.

On the other hand, the states with levels of public debt, related to GDP, greater than 60%, will have more demanding medium-term budgetary objectives, limiting their possibilities of spending for public investments, for the gradual reduction of public debt and limitation, potential threats to national or cross-border macroeconomic stability.

Strengths and possible vulnerabilities of the methodology for determining the medium-term budgetary objective

Strong points

The general criteria for the quantitative determination of the medium-term budgetary objective specific to each Member State came from both the triple objective and the general objectives of the SGP reform. After designing the three criteria, there was no common agreement on the degree of hierarchical exigency of the three criteria in determining the general medium-term objective.

The EC's view was that greater weight should be given to the current level of public debt and potential growth prospects, while the CEU did not make any clarification on the need to determine the value of the medium-term budgetary objective on the basis of granting a increased importance of public debt and potential growth, which should be more demanding than those values that would only cover the margin of budgetary security. Following the negotiations, it was concluded that leaving the Member States' freedom to set the medium-term budgetary objective, with the risk that they cover only the margins of budgetary security could conflict with the purpose of preserving fiscal sustainability and, in addition, could undermine the general credibility of the EU fiscal framework. Thus, on the basis of these arguments, it was agreed, to pay more attention to the criterion related to public debt and potential growth (more relevant) in determining the medium-term budgetary objective**.**

[18] *Including contingent liabilities*

[19] *Treaty on the Functioning of the EU, consolidated version, 2012.*

After a transitional period in addressing the medium-term budgetary objective, the joint efforts of the responsible institutions and of the Member States have resulted in a unanimously agreed methodology, which, in our opinion, has some advantages.

First, the methodology improves the simplicity and political commitment of the procedures for setting the medium-term budgetary objectives. It is obvious that, despite the computing algorithm that has not yet been revealed, the code of conduct provides guidance on efficiently substantiating and implementing several components of the algorithm.

The simplicity of the methodology facilitates the understanding and technical discussions between stakeholders within the EU fiscal framework - in particular, the EC and the Member States engaged in multilateral budgetary oversight and, in general, in evaluating the effectiveness of the SGP.

In addition, fiscal-budgetary prudence is strengthened because the Member States can no longer set medium-term budgetary objectives with too much freedom, but are constrained, based on their historical behavior, in particular regarding public debt, but also with perspective, with regarding the expenses for social insurances, to respect certain fiscal-budgetary rules, by which to ensure the long-term fiscal-budgetary sustainability.

Secondly, the medium-term budgetary objectives are now incorporated in a better defined quantitative framework: for each Member State approximate exact values can be calculated for its minimum reference value; for the budget balance that would stabilize the total public debt / GDP ratio to 60% (depending on the potential long-term growth); for the additional debt reduction effort, specifically for states with a total public debt of more than 60% of GDP, which implies rapid progress towards adjustment; for the cost component with the aging population.

These criteria of the framework for determining the medium-term budgetary objective also contain aspects that can be improved (potential estimation gaps, budgetary sensitivities, methodological improvements), which are still subjects of study, analysis developed jointly by the EC and the Member States, which also ensures the compatibility of the methodology of determination with other formal procedures existing at EU level.

Third, the model of the medium-term budgetary objective pays more attention to the criterion related to public debt, both explicit (present, but incorporating historical behavior) and implicit (related to the outlook and coverage of public spending growth with insurance). social), which ensures a connection between the fiscal-budgetary behavior (past, present and future) and the distribution of the budgetary effort according to this behavior, for constraint in order to bring balance and to temper the pro-cyclical character of the fiscal-budgetary policy.

This situation has advantages for Member States with a present level of public debt relative to GDP, below 60%, benefiting from less constraining levels of medium-term budgetary objectives, with the possibility of higher public spending in the coming period, and disadvantages. for the Member States that register a present level of public debt related to GDP, over 60%, being forced to greater efforts (directly proportional to the distance to this report), in the next period in order to converge to it.

Possible vulnerabilities

From a theoretical point of view, one characteristic of the methodology for determining the medium-term budgetary objective is that it manages to establish a connection between the specific objectives of the fiscal-budgetary policy, taking into account the past, present and future behavior, respectively: the value outstanding public debt; the existence of commitments on social security expenses (so-called implicit debts) and the determination of the freedom to undertake discretionary measures and public investments, in order to ensure long-term fiscal sustainability.

In this context, we are trying to identify whether the specific determinants of the medium-term budgetary objective and the connection between them present certain vulnerabilities regarding the sustainability of public finances and their long-term sustainability as the main purpose of this mechanism.

From the point of view of the methodology for determining the potential GDP and, implicitly, the output gap

Both categories of models presented (univariate and multivariate) present some difficulties generated by: the small size of the sample of data used, the complete coverage of an economic cycle being uncertain; the late appearance of official statistical data on GDP, compared to the

calendar end of the period to which it refers, being subject to revisions that generate additional uncertainty about GDP and require revision as more statistical data becomes available and final.

The disadvantage for the univariate models derives precisely from their univariate character, the possible interactions with other macroeconomic variables are not considered, and the result does not strictly correspond to a precise economic definition of the potential GDP. The multivariate models have the disadvantage that they require longer data sets than the univariate methods.

The Kalman and Hodrick-Prescott filter methods - are univariate and in addition to the mentioned disadvantages, generate discussions about the separation of the tendency from the cyclical oscillations, respectively if this really means the potential value of the system / process concerned, their use during periods of post-shock does not generate relevant results, being recommended only during periods of economic normality.

The method based on the Cobb-Douglas function is, in relation to the other two methods presented, the most suitable for determining the potential GDP, because it is closest to its concept (definition).

There are thus some methodological uncertainties regarding the estimation of the potential GDP, which are transmitted, consequently, also on the output gap and, implicitly, on the size and interpretability of some indicators in determining which potential GDP and the output gap play an important role.

From the point of view of solvency

We refer to the fact that in the situation of a Member State with a public debt over 60%, the reduction efforts are higher, and the partial anticipated pre-loading of the increase of the expenses with social insurance affects the solvency in the medium and long term. Basically, the partial pre-loading of the increase of the expenses with the social insurances implies the preservation of part of the current resources available for future periods, up to 50 years. This situation can affect the sovereignty of a state in this situation in its debt reduction efforts.

From the point of view of inhibiting the economy

Fiscal-budgetary constraints imposed by the medium-term budgetary objective, especially in the case of Member States with public debts that exceed 60% of GDP and have restrictions on the level of growth of public spending, can affect the economic growth, in the sense of entering into a period of negative economic growth, and the possibilities of fiscal-budgetary policy of intervention and stimulation of the economy, in such a situation, become extremely limited, in the short and medium term.

At the same time, there is the possibility that the role of the medium-term budgetary objective described will be affected by the slowdown of the economic growth generated precisely because it is demanding and an excessive adjustment is being tried, limiting the fiscal-budgetary possibilities of stimulating the economy (fiscal space and those of fiscal consolidation, which can affect the credibility of this instrument.

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SPECIFIC ASPECTS OF THE GLOBAL BUBBLE OF PUBLIC DEBT

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Abstract:

Debts are a basic practice and a solution for any functional economy. Governments are lending money to finance projects such as roads, hospitals, schools and to fulfill promises on reducing taxes. The ratio of general public debt to GDP has increased in most states over the last 10 years. The governments of several states take advantage of the low level of the interest rate and collect the debts that inevitably become overwhelming. Under conditions of exaggeration, it becomes a factor of destabilizing financial situation within both the country and international financial market. Currently, we can talk about the formation of a financial bubble based on increasing government debt. Based on this, the existence and evolution of public debt bubble requires the correction of financial policies in developing countries in relation to systemic risk management in domestic financial market and in formulation and promotion of national debt management policy.

Keywords: *financial bubble, global debt, public debt, Gross Domestic Product*

JEL classification: *E61, E62, H62, H63*

Introduction

The notion of public debt in different bibliographic sources is treated differently. However, in the context of the given paper, by the public debt (also known as government debt, national debt and sovereign debt (*Government…*, n.d.)) means the totality of internal and external financial obligations of state, at a certain time, coming from loans contracted directly or guaranteed by the Government, through the Ministry of Finance.

In another approach, the public debt constitutes the amount of existing obligations of state towards natural and legal persons, other states, international institutions and other subjects of international law. (*Государственный...*, n.d.)

Governments constitute debt by issuing government bonds and bills. Some countries borrow directly from a supranational financial organization (e.g. the International Monetary Fund. The World Bank) or international financial institutions (e.g. the European Investment Bank). (Government…, n.d.)

Government debt appears in two forms: internal debt and external debt.

Under conditions of rapid and unfunded growth, public debt can turn into financial bubble.

The financial bubble is a business area, which is seen as having unlimited growth potential at a given time and attracting huge funds, but which is at risk of exploding at any time, and people running out of money. (Boga. 2009)

Government debt bubble represents a massive increase in the volume of government debt without noticing the real increase in possibilities of its repayment. It may appear, in particular, on government securities market.

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Under conditions of financial globalization, sovereign debt bubbles in some countries can become contagious bubbles - bubbles, which are formed on markets of one country and move on markets of other countries. (Fetiniuc, Luchian, Gherbovet, 2014)

In addition, the concentration of loan capital in certain countries is remarkable, which inevitably leads to the manifestation of dislocation effect. This is the excessive use of possibility of attracting financing by some countries, while other countries are limited in access to such funding.

Description of the problem

The global amount of public debt in 2019 was USD 70 trillion, with the upward trend as shown in Figures 1 and 2.

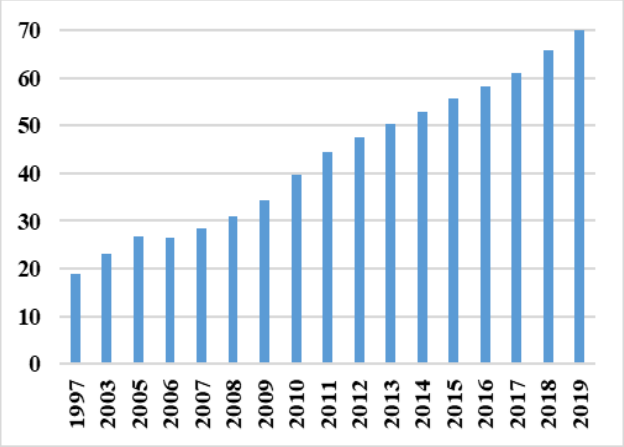

Figure 1 – Dynamics of global government debt (USD trillion)

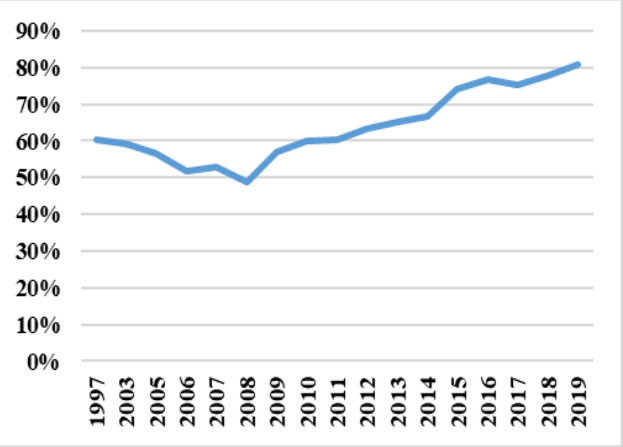

Figure 2 - Evolution of global goverment debt to global GDP ratio (%)

Sources: (Luchian, Tepordei, 2019), (Srivastava, 2019), (*GDP*…, n.d.)

During the period of 1997-2019 the total sovereign debt increased from USD 19 trillion to USD 70 trillion, i.e. to 3.7 times, the average annual growth rate being USD 3.1 trillion.

At the same time, the global goverment debt to global Gross Domestic Product (GDP) ratio increased from 60.5% to 80.8%.

In the specialized literature, we find different views on the sustainability of the indebtedness policy of the states from the point of view of the share of national debt in GDP, recommending that this should not exceed the threshold of 60%. (Luchian, Tepordei, 2016)

It is also remarkable that the government debt has an increasing tendency, being part of a larger global debt (Figures 3 and 4).

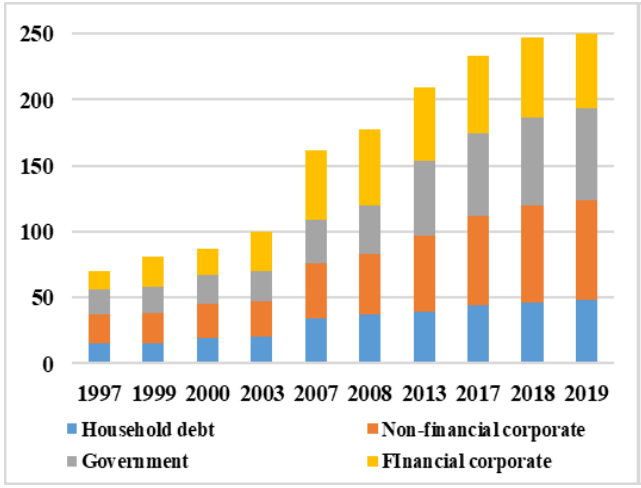

Figure 3 - Dynamics of global debt (USD trillion)

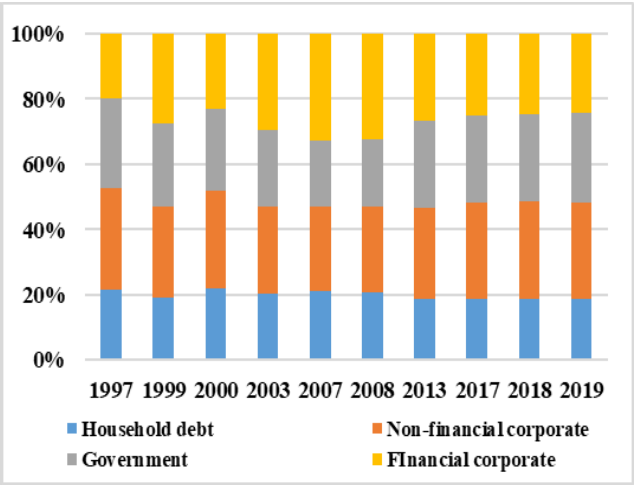

Figure 4 - Dynamics of structural changes in global debt (%)

Sources: (Luchian, Tepordei, 2019), (Srivastava, 2019), (Durden, 2019)

During the anlysed period the amount of global debt increased from USD 70 trillion to USD 255 trillion, i.e. to 3.6 times and the share of global government debt has fluctuated, increasing from 17.3% in 2007 to 27.5% in 2019.

Methodology and data sources

In order to conduct the research on global public debt problem, information from international financial institutions (IMF, BIS, IIF, World Bank, OECD), official information sources, public institutions' reports, as well as opinions, results of analysis carried out by experts were studied. The study was completed by formulating the conclusions related to this financial phenomenon.

Results obtained

Global public debt has a relatively high level of concentration. The research shows three groups of countries, which have an important impact on the growth of global government debt (Figures 5 and 6).

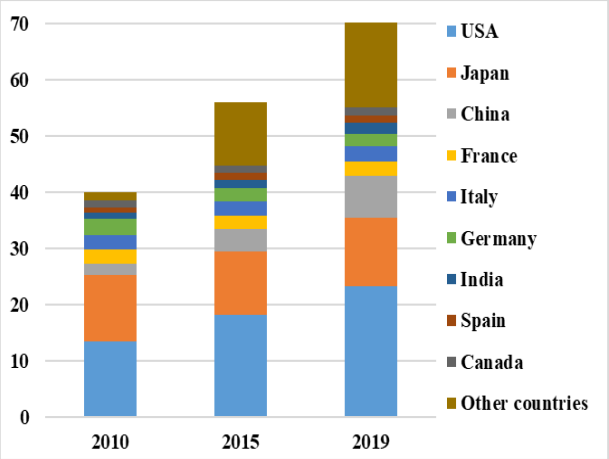

Figure 5 - Dynamics of global debt in the divisions on the constituent countries (USD trillion)

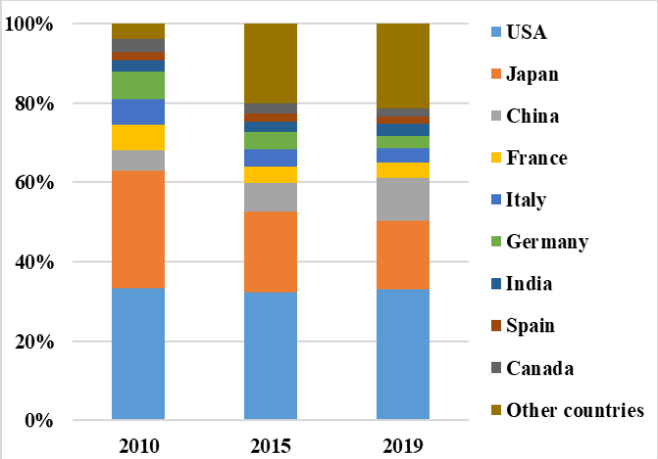

Figure 6 - Dynamics of structural changes in global debt in the divisions on the constituent countries (%)

Sources: www.statista.com, countryeconomy.com/national-debt

The first group with major influence consists of three countries: USA, Japan and China, whose total national debt (based on previous data) constituted USD 42.8 trillion, increasing with respect to 2015 with USD 9.3 trillion as compared to 2015 and with USD 15.5 trillion compared to 2010.

It is remarkable that the national debt of this group of countries in 2019 constituted 61.2% of the global amount of government debt. However, this share had a tendency to decrease, increasing by 1.4 p.p. compared to 2015 and falling by 6.9 p.p. compared to 2010.

According to some forecasts, global government debt will increase due to these countries with USD 2.9 trillion in 2020 and USD 15.2 trillion in 2024.

The second group with significant influence meets France, Italy and Germany with a volume of gevernement debt of USD 7.4 trillion, increasing by USD 0.2 trillion compared to 2015, but decreasing by USD 0.5 trillion as compared to 2010.

The weight of this group in the total volume constituted 10.6%, which decreased as of 2015 by 2.3 p.p. and 9.2 p.p. compared to 2010.

Due to Germany's debt reduction policy, the government debt of this group of countries will change insignificantly.

The third group consists of Spain, India and Canada, whose total gevernement debt is USD 4.8 trillion, increasing by USD 0.8 trillion compared to 2015 and USD 1.5 trillion as compared to 2010.

The share of this group of countries in the global volume of debt in 2019 constituted 6.9%, which decreased by 0.4 p.p. compared to 2015 and with 1.4 p.p. compared to 2010.

In 2020, due to these countries, global sovereign debt is projected to grow by USD 0.3 trillion and in 2024 - by USD 1.5 trillion.

In the period 2001-2019, the discrepancy between emerging market and developing economies and advanced economies in the ratio between government debt and GDP increased (Figure 7).

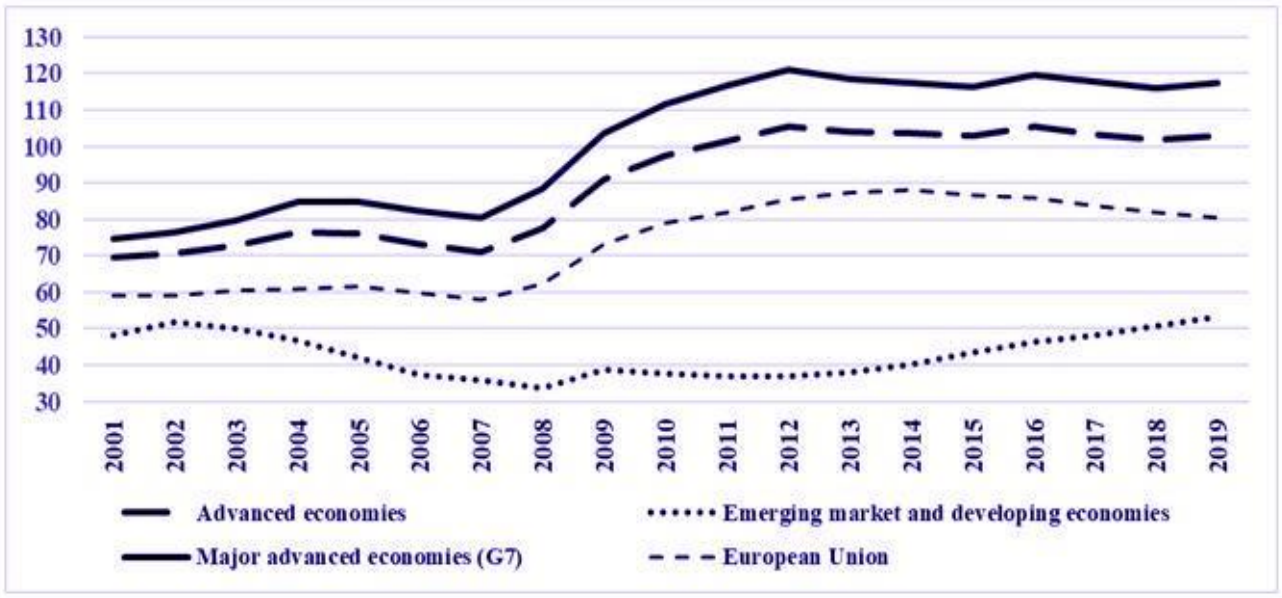

Figure 7 - Dynamics of public debt to GDP ratio in emerging market and developing economies and advanced economies

Source: (*General...*, n.d.)

During the mentioned period in emerging market and developing economies the weight of government debt in GDP ranged from 48.1% in 2001, 33.8% in 2008 to 53.3% in 2019.

In the advanced economies, the mentioned ratio is higher than emerging ones, constituting 69.6% in 2001, increasing to 105.6% in 2012 and reaching 103.1% in 2019.

But the highest level of government debt is registered in the major advanced economies (G7 countries), which in 2001 was 74.8%, the maximum level reached in 2012 - 121.0%, and in 2019 it was 117.3%.

An important aspect of the increase of government debt in the industrial developed countries constitutes its distribution by the categories of investors in which it is placed.

For example, the United States of America can be presented (Figure 8 and 9).

During 2001-2019, the national debt of this country increased from USD 5.8 trillion to USD 23.2 trillion, that is, by USD 17.4 trillion or 4.0 times.

Similarly, the ratio of national debt to U.S. GDP increased from 53.2% to 106.8%.

According to the information presented by Kimberly Amadeo (2020), the US national debt consists of two parts:

- Intragovernmental holdings – 26%;
- Debt held by the public – 74%.

Also presented is the debt structure in the section of US Treasury Securities holders in the situation from the second quarter of 2019:

- Foriegn investors – USD 6.77 trillion USD, their investments increasing compared to 2001 with USD 5.57 trillion;
- Pensions – USD 2.60 trillion with respective growth of USD 1.54 trillion;
- Monetary authorities - USD 2.32 trillion (+ USD 1.77 trillion);

- Mutual funds - USD 2.11 trillion (+ USD 1.85 trillion);
- Individuals - USD 2.02 trillion (+ USD 1.61 trillion);
- Banks - USD 0.92 trillion (+ USD 0.05 trillion);
- State/Local government - USD 0.62 trillion (+ USD 0.28 trillion);

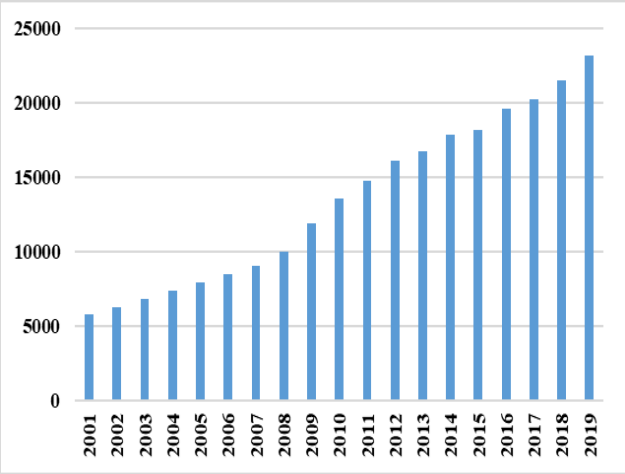

Figure 8 – Dynamics of national debt of USA (USD billion)

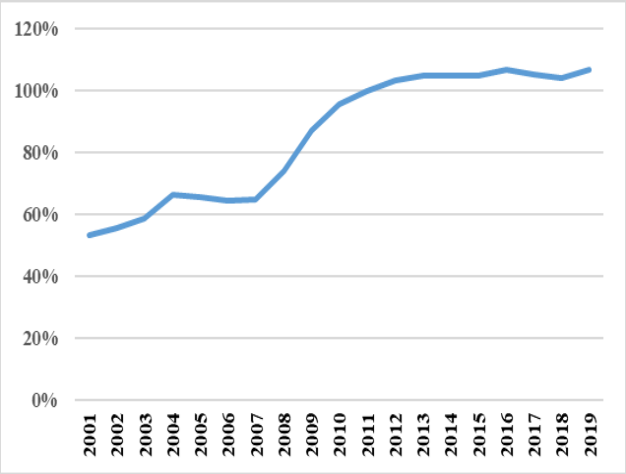

Figure 9 - Evolution of USA national debt to GDP ratio (%)

Sources: (*U.S. GDP…,* n.d.), (*Соединенные*…, n.d.), (*United States*…, n.d.), (*Public debt*…, n.d.)

- Insurance companies - USD 0.36 trillion (+ USD 0.24 trillion);
- Other - USD 0.29 trillion (+ USD 0.21 trillion).

The presented information denotes that foreign governments and investors have the largest share (29%) of US national debt, main holders being:

- Japan – USD 1.17 trillion;
- China – USD 1.11 trillion;
- United Kingdom – USD 334.1 billion;
- Brazil – USD 298.6 billion;
- Ireland – USD 286.6 billion;
- Luxembourg – USD 263.3 billion;
- Switzerland – USD 233.4 billion;
- Other – USD 3.1 trillion.

From the above, it appears that national debt is strongly integrated in US financial system, as well as in international system.

An important factor in increasing the US national debt is the significant increase in official currenciy reserves and the preservation of the important place of the US Dollar in them (Figures 10 and 11).

Official currency reserves expressed in US Dollars increased from USD 1.4 trillion in 2000 to USD 6.7 trillion in 2019, which is 4.9 times. However, their share in the total volume of official currency reserves has decreased, respectively, from 71.1% to 61.8%, that is, by 9.3 p.p.

This process has led to increased demand from many countries for high quality loan instruments, such as US Treasury Securities.

A growth factor of global public debt bubble has increased wealth of individuals (Table 1).

Thus, the number of people with wealth between USD 100 thousand and USD 1 million during the period 2011-2019 increased, respectively, from 369 million to 499 million. Their welfare grew from USD 100.6 trillion to USD 140.2 trillion, that is, with USD 39.6 trillion or 1.39 times.

The number of people with wealth greater than USD 1 million increased from 29.7 million to 47 million.

Their fortune increased from USD 89.1 trillion to USD 158.3 trillion, that is, with USD 69.2 trillion or 1.78 times.

Once US Treasury Securities are considered safest in the world, they are included in the list of investment objects of these individuals.

An important contribution in the formation of the global bubble of government debt is brought by Japan (Figures 12 and 13).

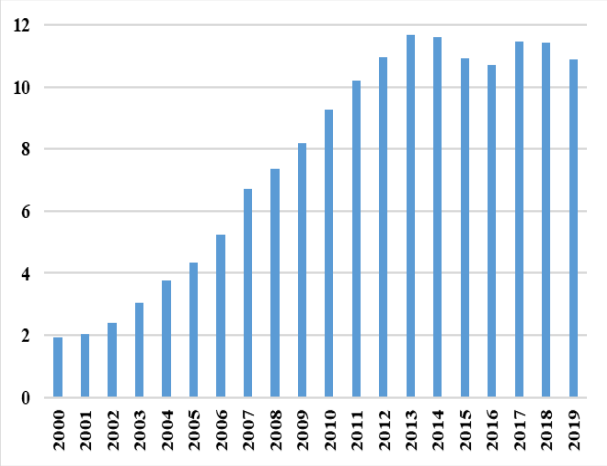

Figure 10 – Dynamics of global currency reserves (USD trillion)

Sources: (*Charting…*, n.d.), (*Development…*, n.d.)

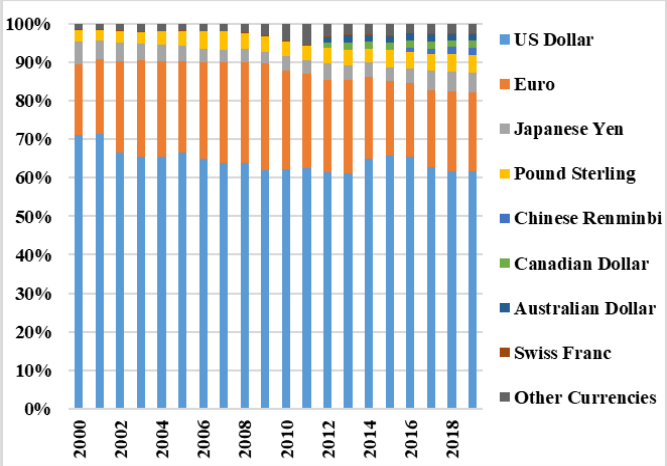

Figure 11 - The structure of world's currenciy reserves (%)

Sources: (*Reserve…*, n.d.), (Watson, 2019)

Table 1

Global wealth pyramid evolution

Wealth Range	2011		2019	
	Number of adults (million)	Total wealth (trillion)	Number of adults (million)	Total wealth (trillion)
>$1000000	29.7	89.1	47.0	158.3
$100000 - $1000000	369.0	100.6	499.0	140.2
$10000 - $100000	1066.0	33.5	1661.0	55.7
<$10000	3054.0	7.6	2883.0	6.3
Total	4518.7	230.8	5090.0	360.5

Sources: (Ruccio, 2011), (Johnson, 2019)

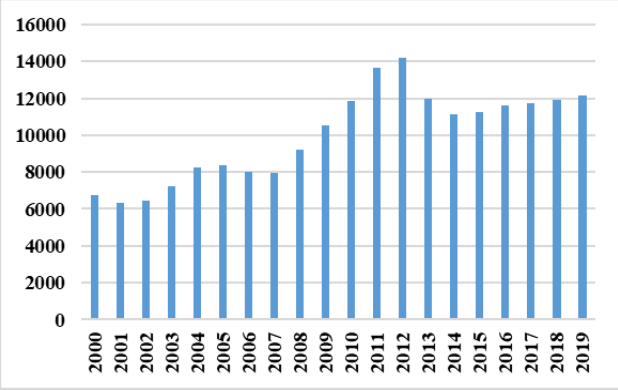

Figure 12 – Dynamics of national debt of Japan (USD million)

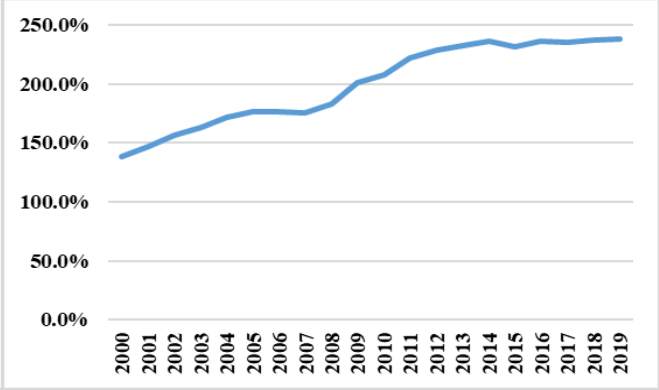

Figure 13 - Evolution of Japan national debt to GDP ratio (%)

Sources: (*Japan…*, n.d.), www.statista.com

During the years 2000-2019, Japan's national debt increased from USD 6.7 trillion to USD 12.1 trillion, i.e. USD 5.4 trillion or 1.8 times. Moreover, national debt from 2000 to 2019 in relation to GDP of this country increased by 99.8 p.p., from 137.9% to 237.7%.

During 2000-2019, China's national debt increased from USD 276.98 billion to USD 7518.4 billion or 27.1 times. At the same time, the ratio of national debt to GDP increased from 22.8% to 55.6%.

The dynamics of ratio of public debt to GDP of European Union has had the general tendency of growth. If in 2000 this indicator constituted 60.1%, in 2014 the maximum level of 86.5% was reached, after gradually decreasing to 85.9% in 2019. (*Government debt up…*, n.d.)

In this regard, EU countries can be divided into three groups (*General...*, n.d.):

- The first group consists of 4 countries with a high level of debt: Greece (176.6%), Italy (133.2%), Portugal (117.6%) and Belgium (101.0%).
- The second group comprises 9 countries with debt levels between 60% and 100%: Ireland (60.9%), Slovenia (67.1%), Hungary (67.5%), Croatia (71.1%), United Kinfdom (85.6%), Cyprus (96.1%), Spain (96.4%), France (99.3%), Spain (96.4%).
- The third group can be considered as a zone of financial stability composed of 15 countries: starting with Estonia (8.2%) and ending with Finland (58.9%).

Apart from the above, it can be mentioned that in the world, besides the mentioned ones, there are other countries with a relatively high level of public debt to GDP ratio. As an example, can be presented: Sudan (207%), Eritrea (165.1%), Lebanon (155.1%), Cabo Verde (123.5%), Barbados (115.4%), Singapore (114.1%), Mozambique (108.8%), Bhutan (108.6%), Bahrain (101.7%), Jordan (94.6%), Jamaica (93.5%), Brazil (91.6%), Egypt (84.9%), Sri Lanka (83%). (*General...*, n.d.)

Conclusions

The aforementioned ones demonstrate the development of exaggerated increase process of government debt on a world scale, which can be considered as the formation and development of a financial bubble.

Given the fact that the recommended norm of sustainability has been exceeded globally, we can talk about constituting an important systemic instability factor in the global financial market.

In the short term, the formation of financial bubble from certain countries has the effect of dislocation, creating problems with the mobilization of loan capital to central authorities of developing countries. In the long-term perspective, it is possible to break this financial bubble, which will have the effect of triggering a new international financial crisis. As a result, the existence and evolution of global bubble of government debt requires the correction of financial policies in developing countries both in relation to the management of systemic risk on domestic financial market and in the formulation and promotion of national policy for government debt management.

Future Directions to Be Approached

The study of addressed topic in the paper is to be continued by results monitoring global public debt evolution.

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EVOLUTION OF THE ROMANIAN BUSINESS ENVIRONMENT IN THE CONTEXT OF TAX CHANGES IN THE PERIOD 2015 – 2018

Ph.D. Mihăilă Nicoleta[22]

Abstract:

The purpose of the paper is to capture the evolution of the business environment as the Romanian tax legislation has undergone numerous changes in the last period. Therefore, we analyze the main fiscal regulations of the last 3 years (2015-2018), the effects on the demographics and structure of the business environment and the main difficulties, but also the challenges that the companies are currently facing. In this context we use a descriptive methodology, appealing to the current fiscal legislation in Romania and the most recent reports / documents and databases of the specialized bodies (Ministry of Finance, Institute of Statistics, Coface or Trade Register).

Keywords*: fiscal regulations, firms, difficulties, challenges*

Jel classification*: H32, H 25*

Introduction

In the period 2015-2018 in Romania there were about 560 tax changes regarding the way of taxing the profits of the companies that materialized in its orientation to a much greater extent towards the taxation of the revenues instead of the one of the profits, the quotas applied being reconsidered and now depending on the number of employees, and by replacing the corporate income tax with a specific tax for certain categories of activities. This change in the system of taxation of corporate earnings was achieved by massive expansion of the companies in the category of micro-enterprises, the ceiling of annual revenues up to which a company is included in this category being increased by more than 15 times in the period 2015-2018.

Tax changes regarding the direct taxation in the period 2015- 2018

Legislative changes in the period 2015-2018 aimed at increasing of over 15 times the annual income ceiling to which a company is included in microenterprises category, namely increasing from 65 000 euro in 2015 to 100,000 euro in 2016, 500000 euro in 2017 and 1000000 euro in 2018.

As for the tax rates applied to the income of micro-enterprises, they have been reduced and differentiated according to the number of employees starting with the year 2016.
From the flat tax of 3% in 2015, in 2016, the rate of 3% was applied for companies without employees, 2% for companies with 1 employee and 1% for companies with at least 2 employees. In 2017, the number of tax rates was reduced to two: 1% for companies with employees and 3% for companies without employees.
Small companies have also the opportunity to opt for payment of income tax or profit tax, the capital conditions needed to exercise this option being significatively reduced, namely from the equivalent of 25000 euro in 2015 and 2016 to 45000 lei starting with the year 2017.
However, starting with January 1, 2017, companies with activities in tourism, restaurants and catering and paying the profit tax become liable to pay a specific tax, this tax having the characteristics of a flat tax.
In 2015, the Fiscal Code was rewritten. Law no. 227/2015 regarding the Fiscal Code aims to continue the measures to increase the efficiency of the fiscal system. Also, tax on dividends paid to

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Romanian legal persons had a reduction of the rate from 16% to 5% for dividends paid to Romanian legal persons.

Income tax on microenterprises:

● the increase of the ceiling of the classification in this system of taxation from 65000 euro to 100000 euro, as well as the introduction of a differentiated system of tax rates, between 1% - 3%. The tax rates on the income of micro-enterprises are: 1% for micro-enterprises that have more than 2 employees, including; 2% for micro-enterprises that have one employee; 3% for micro-enterprises that do not have employees.

● introducing a measure to support newly created micro-enterprises by introducing a tax rate of 1% in the first two years of existence of the legal person, conditioned by the hiring of an employee.

The fiscal measures regarding the introduction of differentiated tax rates for micro-enterprises between 1% and 3% of the total revenues, depending on the number of employees, compared to 3% previously, increasing the income ceiling up to which a company is considered micro-enterprise from the equivalent in lei of 65 000 euro to 100000 euro, have led to a budgetary impact estimated by the Ministry of Public Finance at about -300 million lei. Also, the exemption of the reinvested profit and the revision of the dividends income had a budgetary impact of - 56 million lei, respectively -57 million lei.

It was estimated that microenterprises - almost entirely with domestic capital, would be much more interested in fairness in business and in reducing the hidden economy. It was also estimated that about 80000 microenterprises, which in 2013 had neither turnover nor number of employees, will remain inactive. These measures aimed at increasing the number of jobs by about 101 thousand, increasing the profit / reduction of losses for microenterprises with more than 2 employees, increasing the income tax revenue and social contributions if some of these microenterprises will change their entrepreneurial approach and will hire one or two employees to benefit from the 1% tax.

Construction tax: in 2016, agricultural constructions are excluded from the tax base for determining the construction tax. In 2017 it will be eliminated.

The year 2017 was characterized by reduced receipts to the state budget, due to:

- Emergency Ordinance of January 6, 2017 on the modification of the micro-enterprises regime (increasing the threshold up to which a company is considered a micro-enterprise from EUR 100,000 in 2016 to EUR 500,000 starting with January 1, 2017), group of companies to which the tax rate per profit is significantly lower than other types of companies,
- wage increases throughout the economy, with a potential negative effect on corporate profit and, implicitly, a lower profit tax volume compared to 2016;
- Introducing, since January 1, 2017, the specific tax for companies in the tourism and food sectors that practically replaced the corporate tax (but with a reduced tax rate!).

In 2018, the main measures adopted were:

- Reducing the income tax rate from 16% to 10%;
- Reduction of the total share of compulsory social contributions, by a total of 2 percentage points, from 39.25% to 37.25%;
- Reducing the number of social contributions from 9 to 3, respectively the social insurance contribution (CAS), the social health insurance contribution (CASS) and the labor insurance contribution;
- Establishing for the employers the contribution of insurers for work at a rate of 2.25% for the income from wages and assimilated to wages;
- Transfer of the fiscal burden of the obligations regarding the compulsory social contributions due by the employer to the employee, in the case of income from wages and assimilated to wages;
- Introducing an improved VAT collection mechanism (split VAT);
- Reduction of the transfer rate to Pillar II to 3.75%, maintaining at the same absolute value of the transfer as compared to 2017.

According to the data in the table below, we observe that these fiscal measures adopted during the analyzed period have resulted in a reduction of the revenues to the consolidated budget (by types of income), as follows: the income from the profit tax reached 1.6% of GDP in 2018, from 2% of GDP in 2016 (but they have an upward trajectory in the coming years), the income tax revenues also decreased, reaching 2.4% of GDP in 2018, from 3.6% of GDP in 2016, VAT also registered a percentage decrease.

Table 1:

Revenues of Genaral Consolidated Budget – income types (% of GDP)

	2016	2017	2018	2019	2020
Total,of which	29.4	29.4	31.1	33.5	32.2
Profit tax	2.0	1.7	1.6	1.7	1.6
Income tax	3.6	3.5	2.4	2.3	2.4
Property taxes	0.8	0.6	0.6	0.6	0.6
VTA	6.8	6.2	6.3	6.8	6.5

Source: Ministry of Public Finance, Fiscal-Budgetary Strategy 2019-2021

Evolution of business environment in the period 2015- 2018

According to the data of the National Trade Register Office, the following can be observed that the number of companies that interrupted their activity in 2018 exceeds the threshold of 140,000. At the same time, the number of newly registered SRL companies decreased in 2018 by 9%, in the context of high pressure on wage costs, labor migration, rising financing costs and the lack of fiscal predictability. This may indicate a deterioration of confidence in the prospects of the medium-long-term economy from current entrepreneurs, or those thinking of starting a company. Thus, at each new company registered in the previous year, there are almost 1.6 companies that have discontinued their activity.

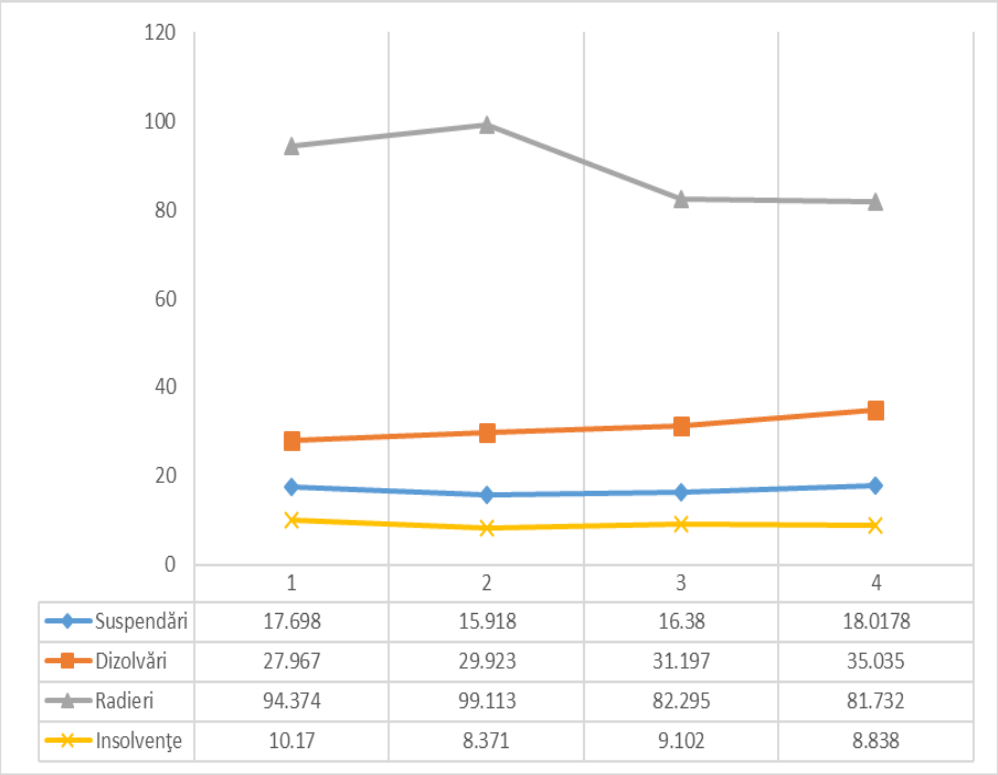
Table 2 Registrations vs Activity Interruptions Report

Interruption category	2015	2016	2017	2018
Suspensions	17.698	15.918	16.380	18.0178
Dissolutions	27.967	29.923	31.197	35.035
Cancellations	94.374	99.113	82.295	81.732
Insolvencies	10.170	8.371	9.102	8.838
Total closures	150.209	153.325	138.974	143.783
Total registrations	113.167	105.982	136.699	131.457
din care SRL	64.417	73.889	98.405	89.563
Report OUT/ IN (SRL)	2.3	2.1	1.4	1.61
Survival rate	79%	82%	88%	95%
Consolidated net result	1%	-3%	-5%	-

Source: Iancu Guda, Association of Financial and Banking Analysts of Romania, 2019, AAFBR Newsletter No.8

Regarding the interruptions (closures), we observe an increase in 2016 (the maximum reached), a reduction in 2017 and again an increase in 2018. This fact we consider is due to the economic context as a whole, and the fiscal measures taken in the respective period worsened the situation. As for registrations, they increased until 2017, and the following year they decreased.
The main factors that cause the decrease of the confidence level of the entrepreneurs, on the other hand, are:

- Increased expenditure (especially on wages, utilities and fuel);
- Increased interest expenses and repayment of bank loans;
- Fiscal unpredictability (uncertainty regarding new tax regulations);
- The Romanian underground economy (estimated by the European Commission at almost 32% of GDP, the highest level in the EU after Bulgaria);
- Difficulty finding a workforce at a salary that reflects real productivity.



	1	2	3	4
Suspendări	17.698	15.918	16.38	18.0178
Dizolvări	27.967	29.923	31.197	35.035
Radieri	94.374	99.113	82.295	81.732
Insolvenţe	10.17	8.371	9.102	8.838

Figure 1. Evolution of interruption in the period 2015- 2018

Source: figure based on data from Table no.2

The future perspectives are pessimistic, because the vulnerability of the active business environment in Romania has increased in the last decade due to the following factors: modest long-term investments, decapitalization of companies, loss of short-term financial independence due to negative working capital, systemic risk increase due to extending the billing deadline to historic highs, oversizing stocks, increasing pressures on corporate profitability and fueling an inflationary spiral process due to rising costs, rising wages over productivity, polarizing revenues and liquidity at large companies in the context of sub-bedding , tensing the labor market due to the depopularization of Romania and the underdevelopment of the national road transport network.

Barriers to business activity

The main factors that cause challenges and risks for the business environment are;

- The level of taxes and dues,
- Frequent and unpredictable changes in policies, laws, regulations of an economic nature
-Macro-instability

The causes that led to a high difference in the number of registrations in the first 6 months of 2018 compared to 2017, were various, the most important being the marked instability of the tax legislation registered in the first quarter of 2018, as well as the huge volume of normative acts adopted (in the first 6 months of 2018, the legislative framework was majorly modified, being adopted 1210 normative acts, over 45% of the laws and ordinances adopted affecting directly and significantly the companies, including SMEs - tax legislation, declarations and mandatory contributions, etc.).

The volume of amendments to the Fiscal Code of the first quarter of 2018 was 173% higher than in the first quarter of 2017 (69 articles modified / completed in the first quarter of 2017 vs. 120 articles modified / completed in the first quarter of 2018), in the conditions in which last year it was registered a record of tax legislative changes (290 articles of the Fiscal Code were modified / completed). In the first 90 days of 2018, the business environment was obliged to implement 217 new regulations amending / completing Law no. 227/2015 regarding the Fiscal Code, 97 even from the first day of the year and another 120 adopted at very short distances, to which were added important changes of the Fiscal Procedure Code and the legislation on compulsory contributions.

Changes in tax legislation have generated multiple negative effects on SMEs:

- Increased bureaucracy for all taxpayers and employers;
- Significant effort to implement legislative reforms;
- Increased personnel costs;
- Significant implementation difficulties due to the very short implementation time;
- Increasing the administrative expenses, regarding the updating of computer programs;
- Issues of ensuring competitiveness and the development of contracts for export.

The last decade finds the Romanian business environment somehow "poor" from the point of view of the number of businesses, polarization being the word that characterizes it, large companies providing 86% of revenues while microenterprises realize about 14% of total revenues. Also, of the total number of companies registered in Romania (690000), approximately 190000 companies have no activity at all. Of the remaining approximately 500000 active companies, only about 27700 companies have an annual turnover of more than 1 million euros, respectively 4% of the total, while 96% of these are micro-enterprises.

Although on many indicators small companies and large companies have had similar starting points 10 years ago, the last decade has sifted in favor of caliber players. The latter concentrate not only market shares, but also profits, being more robust in terms of the degree of indebtedness, the efficiency of the use of assets and the relationships with trading partners.

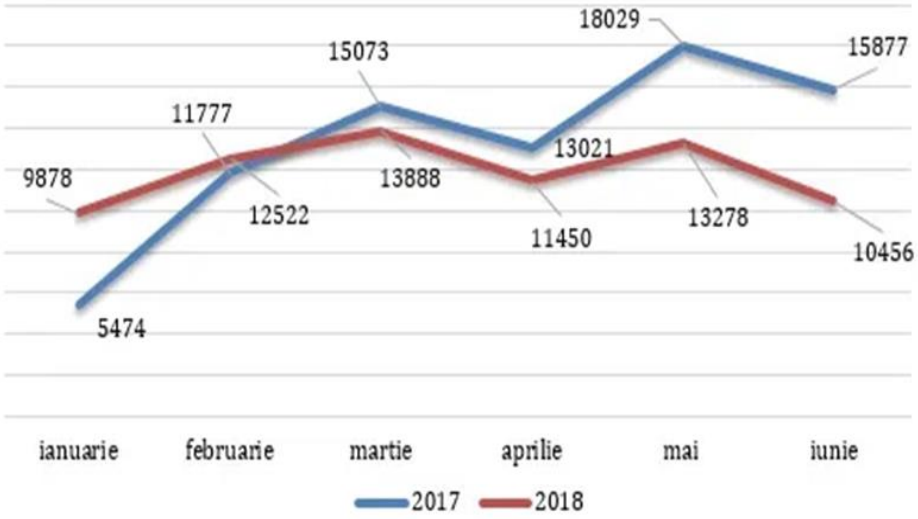


Figure 2. Number of new- created firms 2018 vs. 2017 (first semester)

Source: data collected from www.onrc.ro

The effects of fiscal instability highlighted in 2018, according to the SME Council's balance sheet (Figure no.2):

- Companies with new foreign capital established between 01.01.2018 - 31.10.2018 (4718 companies) are less with 177 companies compared with the period 01.01.2017 - 31.10.2017 (4895 companies);
- The total number of registrations between 01.01.2018 - 31.10.2018 decreased by 8,457 registrations, compared with the similar number from 01.01.2017 - 31.10.2017 (113144 vs. 121601)

Between 01.01.2018 - 31.10.2018 the number of suspensions, dissolutions, insolvencies among companies with foreign participation in the capital were higher than those from the period 01.01.2017 - 31.10.2017;

Between 01.01.2018 - 31.10.2018, the number of suspensions increased by 13.32% (15014 suspensions, compared with 13249 in the period 01.01.2017 - 31.10.2017);

Between 01.01.2018 - 31.10.2018 the number of dissolutions increased by 20.71% (29278 dissolutions, compared to 24254 during the period 01.01.2017 - 31.10.2017);

Between 01.01.2018 - 31.10.2018 the number of insolvencies increased by 28.07% (1492 insolvencies, compared with 1165 during the period 01.01.2017 - 31.10.2017).

Conclusions

Trust in the tax system is an essential condition for investors, predictability being one of the most important factors influencing investment decisions, with direct effects on the growth of the number of SMEs and jobs, increasing the potential and performance of companies, intensifying the innovation of products and services, technologies, systems and methods of management, marketing, financial and GDP revenues.

The main factors that cause challenges and risks for the business environment are the level of taxes and dues, frequent and unpredictable changes in policies, laws, regulations of an economic nature and macro-instability. Also, changes in tax legislation have generated multiple negative effects on SMEs, such as: increased bureaucracy for all taxpayers and employers; significant effort to implement legislative reforms; increased personnel costs; significant implementation difficulties due to the very short implementation time; increasing the administrative expenses, regarding the updating of computer programs; issues of ensuring competitiveness and the development of contracts for export.

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STRATEGY ELEMENTS FOR THE CURRENT EVOLUTION OF THE SMALL AND MIDDLE ENTERPRISES WITHIN THE CONTEXT OF THE FISCALITY ASPECTS

Ph.D. Silviu-Marius Şeitan[23]

Abstract:

The small and medium enterprises hold an important proportion of the business environment, which is why the association of the evolution of these economic entities with the conditions of macroeconomic performance is imperative for the efficiency of the socioeconomic development. Within this context, the small and medium enterprises should be considered as the main source of revenue to the state budget and, at the same time, as the main market for the labour force, these two perspectives showing their essential role in influencing the demand and consumption. Given the way in which these macroeconomic objectives are targeted, particularly by the system of macroeconomic policies, it appears necessary to analyse the interrelationships between the business environment and the macroeconomic administration – context within which the strategic objective of establishing the proper conditions for the evolution of the small and medium enterprises becomes of utmost importance.

JEL classification*: E 62*

Keywords*: microeconomic, macroeconomic, fiscality, SME, evolution*

European administrative references

The fiscal policy of the European Union consists of two components: direct taxation, which is the exclusive competency of the member states, and the indirect taxation, which influences the free circulation of the goods and the free provision of services. In respect of the direct taxation, the member states took measures to avoid tax evasion and double taxation. The fiscal policy aims to avoid distorting the competition between the member states on the domestic market because of the different levels and regimes of indirect taxation. Measures have been also taken to prevent the adverse effect of the fiscal competition when the companies transfer liquidities between the European Union member states.

Current problems of the SMEs in the field of fiscality

Generalities

The Romanian small and medium enterprises have been confronted during the past several years by problems arising from the worldwide economic situation, which influenced substantially the domestic economic situation too, through the established mechanisms of reception and evolution of the economic shocks transmitted via the facilities provided during the recent years by the complexity and evolution of the international economic markets.

Compared to the other microeconomic institutional actors of the economic market, the SMEs can be treated as a special case, given their lower possibilities to ensure and maintain their economic and financial stability, particularly under conditions of the general risk of receiving economic shocks on the market – risk which affects, in a different manner, the market actors; within this context, the

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SMEs are in disadvantage, particularly in terms of the struggle for a share of the market, the leaders, the strong multinational companies, being favoured by their clearly better internal administrative capabilities.

This problem can be noticed, under the current circumstances, under various aspects, as it will be presented by this paper, with the purpose to evaluate a set of associated risks that may affect the national macroeconomic situation and to propose a set of solutions.

Current problems of the SMEs

Generically speaking, the current problems of the SMEs stem from the new state of things which developed after the accession of Romania to the European Union, which implicitly brought in a new posture for the Romanian economic actors, i.e. their participation on the single European market.

Unlike the precedent situation, participation on the domestic economic market – when the foreign trade was an option only for the companies which were considered to have the capacity to withstand the competition and rules of the foreign markets – in the current situation, when Romania is EU member state, the participation of the Romanian companies on the single European market is no longer an option. The problem that arises from here is both the high level of competition, and the stricter market rules that confront the Romanian companies – the bulk of this difficulty falling on the SMEs.

This problem is accompanied by a set of problems which are specific to the Romanian domestic economic market and to the national macroeconomic system – problems among which the increasing fiscality of the recent years is a further pressure, particularly under the conditions in which competing European companies of the same level have to deal with lower fiscality levels, which is a competitional disadvantage on the single European market for the Romanian companies, induced by the problems affecting the system of national macroeconomic policies.

For instance, the level of fiscality is much higher in Romania that in other EU member states, as shown in the table below:

Table 1:

General fiscality levels in European countries

	Country	**General fiscality level (taxes + dues) (% of the profit)**
1.	Romania	42.9%
2.	Bulgaria	27.7%
3.	Poland	41.6%
4.	Denmark	27%
5.	United Kingdom	34%
6.	Germany	49.4%
7.	France	64.7%

Source: personal documentation from several sources – BNR, World Bank, Ministry of Public Finances

Table 2:

Number of taxes and dues paid by the companies in various European states

	Country	Number of taxes and dues
1.	Romania	39
2.	Denmark	10
3.	France	7
4.	Norway	4
5.	Sweden	4

Source: personal documentation from several sources – BNR, World Bank, Ministry of Public Finances

Table 3:

Evolution of the number of active enterprises in Romania, 2002 - 2012

Year	2002	2003	2004	2005	2006
SMEs number	328,445	363,086	410,495	450,202	480,323

Year	2007	2008	2009	2010	2011	2012
SMEs number	520,032	554,967	541,696	491,805	452,010	472,187

Source: National Institute for Statistics

Table .4:

Evolution of the number of active SMEs in Romania, 2002 - 2010

Year	2003	2004	2005	2006	2007
SMEs number	325,425	362,443	396,158	427,578	461,355

Year	2008	2009	2010
SMEs number	485,417	459,857	423,236

Source: National Institute of Statistics and National Commission for Prognosi)

The analysis of the evolution of the number of active SMEs in Romania shows a gradual decrease of their number after 2008, after the accession of Romania to the European Union, which is evidence of the problems confronting the Romanian SMEs on the single European market.

Consequently, one of the main problems currently confronting the SMEs is created by the new conditions of the European market. This seems to be a problem common to all member states and, because it affects the economic systems of these states, it impacts on the European economy as a whole. Hence, legislative and administrative measures have been adopted in Europe, as follows:

- *The Lisbon Strategy and the preparation of the European states to adopt the Small Business Act*: one of the first key documents of small and medium enterprises (SME) policy, the European Small Business Act, was adopted by the EU member states in June 2000, during the General Business Council, as a consequence of acknowledging the importance of the small enterprises for the European economy; the Act has been adopted by the European Council of Feira, of June 19-20, 2000, being considered a key-document for the business policy, part of the European acquis in this field. It stipulates ten directions of action to stimulate the development of the small enterprises. During 2001-2005 interval, the European Commission presented annually during the meetings of the European Council, a report on the progresses of the member states and of the candidate countries in terms of the directions of action stipulated by the Act. As of 2006, the European Commission replaced the report with the annual exercise of the exchange of good practices identified within the member states.

The first really decisive step taken for the improvement of the framework of activity of the small and medium enterprises in Europe was the Lisbon Strategy (LS), adopted in March 2000 by the heads of government and state reunited at the Lisbon European Council. Its aim was to transform the European Union by 2010 in the "most dynamic and competitive economy worldwide, based on knowledge, able of sustainable economic growth, creating new and better jobs and characterized by a higher social cohesion". The principles of the Lisbon Strategy are the basis for the efforts to reduce, in Europe, the administrative barriers and to develop a much "friendlier" economic and investment environment, able to allow reaching the main goals of the document, i.e. 3% annual economic growth and creation of 20 million jobs by 2010. The Lisbon Agenda also stipulated several specific objectives in fields such innovation, enterprises, liberalization of different markets and environmental protection.

In the fall of 2008, the report on the implementation of the Lisbon Strategy, drawn up by a group of experts led by the former Dutch Premier Wim Kok, noticed that the "Agenda is too loaded, there is lack of coordination, and there are conflicting priorities", which show the lack of political will of the member states, and the result was the production of poor results. Following this report, the European Commission considered necessary to relaunch, in 2005, the Lisbon Strategy (rebranded as the Lisbon Strategy for growth and jobs), focusing this time rather on measures that had to be applied, than on goals to be reached.

The European Commission and the member states decided that the new strategy, structured in three-year cycles, must rely on a tight partnership between the member states, while its implementation should rely on the Lisbon Community Program (launched in June 2005), which involves national reform programs updated annually. Thus, in the first annual report, presented in January 2006, the Commission defined four basic areas that needed much action: higher investments in education and research, more support to the small and medium enterprises, job creation and a common energy policy.

According to the second report, of December 2006, the European Commission ensured 75% of the measures which it considered as belonging to the Lisbon Strategy, among which the adoption of the Directive on services, the approval of the Framework Program 7, as well as the progresses in terms of financial services. Again, the Commission identified and sets four priority areas of action: investments in knowledge and innovation, lower administrative pressure for the SMEs, modernization of the labour market, energy and climate changes.

Three years after the start of the Lisbon Strategy, the strategic report of the European Commission, presented during the spring Council of 13-14 March 2008, concluded that the policies defined by the Lisbon Strategy yielded good results, but mentioned that "not all member states implemented reforms with the same determination" and that the reforms in some areas, such as opening the energy and services markets had been implemented at a slower rate.

The report considered that for the next three-year cycle, the implementation of reforms must go on both at the national, and at the community level. The document also set several new initiatives in the four priority areas (European Commission, 2007):

- In the field of investments in people and modernization of the labour market, the report invited the member states to draw up plans of action and to set objectives in order to reduce significantly the early school dropout and to improve the rate of literacy as basic skill.
- In the field of business, the report demands an integrated political approach, in the form of a European law for the small enterprises, which to promote the development and growth of the millions of SMEs which create nine of every ten new jobs.
- In the field of knowledge (education, research-development and innovation), the report proposes measures for the "fifth freedom", the free circulation of knowledge, by the establishment of an authentic European research area and of an integrated law of the patents, with a single accessible patent.

The member states are invited to draw up national strategies for broad band and to set national objectives for the use of high speed internet; these measures are intended to help reaching the goal of 30% of the EU population and 100% European schools connected to the internet by 2010.

- In terms of energy and the climate changes, the report highlights the importance of finishing the establishment of the internal energy market and invited the member states to set compulsory goals for the reduction of electric power consumption in the public administration buildings, and to set the energy efficiency as criterion for the assignment of contracts for public procurement.

This context highlights clearly the imperative need for the establishment, in the shortest period possible, of a new framework of internal policies for the small and middle enterprises from the European Union.
The *Small Business Act*, *a natural step forwards for the establishment of premises for a higher competitiveness of the small and medium economic actors*: this framework appeared on June 25, 2008, less than four months after the release of the report, through communication COM(2008) 394, which adopted the Small Business Act for Europe (SBA) (COM(2008) 394). This document reflects obviously the political will of the European Commission for the acknowledgement of the central role of the small and medium enterprises in the European economy.
The preparation of the document had started in 2007, when the European Commission decided to establish a new framework of policies for the small and medium enterprises, whose objective was an improved general approach of the entrepreneurship by applying the principle „Think small first" in public policies, at all levels of the European Union, and providing constant support for the development and competitiveness of the SMEs.
The unanimous agreement of the member states governments on the content, principles and measures stipulated in the Small Business Act was expressed during the meetings of the Council for Competitiveness organised in 2008, the document being approved by the Council for Competitiveness during the meeting of 1 December 2008. Immediately after, the European Council of 11-12 December 2008, expressed its full support for the implementation of the Plan of action adopted by the Council for Competitiveness.
The European Parliament had also approved, by the resolution from 10 March 2009, the content of the document and recommended the European Commission and the member states governments to start the process of implementation of the measures stipulated by the Small Business Act. The Plan of action annexed to the conclusions of the Council for Competitiveness from December 2008 had set short and medium-term measures in three areas of action which were identified as priorities: access to financing, improved regulatory framework and higher access on the market. These priorities are part of the European Commission's reaction to counterbalance the adverse impact of the financial and economic crisis on the small and medium enterprises.
The initiative of the European Commission aims to intensify the efforts, within the European Union, supporting the development and competitiveness of the small and medium enterprises, by the establishment of a comprehensive and coherent framework of policies, assuming the instruments of policy exiting in the field of the SMEs – the "European Charter for Small Enterprises" adopted by the Feira European Council in 2000, and the "Implementing the Community Lisbon Program. Modern SME Policy for Growth and Employment, 2005", adopted by the Commission Communication from 11 November 2005.
The evaluation of the measures implemented within the context of the "European Charter for Small Enterprises", as well as the manner of applying the conclusions of the European Council of 2006, showed the progresses achieved by the member states in improving the support framework for SMEs development. Complementary, the strategy for a better regulation contributes essentially to the establishment of a favourable environment for the SMEs, by simplifying the legislation and by a 25% reduction of the administrative burden by 2012.
Despite these progresses, the conclusions of the study evaluating SBA impact SEC(2008)2101, showed that significant efforts are further needed to unlock the economic potential of the SMEs from the EU. The main objectives of the Small Business Act aim the improvement of the general approach on entrepreneurship, the irreversible inclusion of the "Think small first" principle in the development of policies, from regulations to public services, and supporting SMEs development by directed assistance to overcome the difficulties confronting them.
With the view to implement the political agenda for the SMEs, the Commission proposed a real political partnership between the European Union and the member states, while observing the principles of subsidiarity and proportionality. The symbolic name of "Act" given to the document highlights the political will of the European Commission to implement, for the first time, a general framework of policies focusing on 10 principles, which to be the basis for the formulation and implementation of future policies regarding the SMEs within the European Union. The "Small Business Act" includes a package of measures which cover all the areas of SMEs policies, including five policy measures aiming to transpose the principles in actual actions.
Thus, European Commission communication COM(2008) 394, 25.6.2008 on the Small Business Act, sets a set of 10 principles and 92 associated measures, among which 5 policy measures,

subsequently adopted or in progress of adoption. The Small Business Act aims an easier access of the small and medium enterprises to financing, a better regulation and a lower administrative burden on the business, access on the internal EU market and on the external markets, promotion of innovation, entrepreneurship and business education. The principles stipulated by the Small Business Act for Europe aim:

I Create an environment in which entrepreneurs and family businesses can thrive and entrepreneurship is rewarded

II Ensure that honest entrepreneurs who have faced bankruptcy quickly get a second chance

III Design rules according to the "Think Small First" principle

IV Make public administrations responsive to SMEs' needs

V Adapt public policy tools to SME needs: facilitate SMEs' participation in public procurement and better use State Aid possibilities for SMEs

VI Facilitate SMEs' access to finance and develop a legal and business environment supportive to timely payments in commercial transactions

VII Help SMEs to benefit more from the opportunities offered by the Single Market

VIII Promote the upgrading of skills in SMEs and all forms of innovation

IX Enable SMEs to turn environmental challenges into opportunities

X Encourage and support SMEs to benefit from the growth of markets

A second problem currently confronting the SMEs is the fiscality. If the fiscal burden exceeds the bearable limit in terms of a proper functioning of an emerging economy, it may transform into one more pressure, contrary to the adoption of measures aiming to enhance the competitiveness on the European market, which presumes financial and managerial efforts to upgrade the microeconomic system of the enterprise. The main pillars of such action are: technological, marketing and management – focusing on the objectives associated to the concepts of quality, market and profitability.

The level of fiscality adds pressure on SMEs functionality, disadvantaging the SMEs from a particular area in Europe to the advantage of their competitors from another area. This aspect is analysed in direct connection with the central idea of the two European documents aiming to develop the business environment within the EU, to create a level playing field for SMEs and improve the legal and administrative environment throughout the EU; once fulfilled, these objectives will leave room for the free competition to regulate the presence of actors on the economic market.

Reverting to the two pillars of the fiscal policy, the difference between the fiscal conditions within Europe is given by the direct taxation component. Thus, the financial position with which the enterprises from different member states enter the competition on the single European market differs very much, and one of the factors which generate this difference is the fiscality from the countries of origin (according to the dictionary, the financial position of an organisation is represented by the level of assets and liabilities and by the state of interrelations between them, as shown in the accounting documents; the financial position of an organisation is also named financial condition).

Hence, fiscality bears an impact on the market evolution of the company by influencing the developmental capacities of the company and by influencing the purchasing power of the company's clients.

Before discussing about the impact mechanisms of fiscality on companies' activity, we must highlight that a properly developed and applied fiscal policy has macroeconomic objectives (converging with those of the other macroeconomic policies). The strategies thus directed induce an impact on the activity of all the market actors from the area submitted to the particular fiscal policy, because these companies are the effectors of economic activities – the sum of these activities being one of the pillars configuring the macroeconomic system. At the same time, market actors also are the receivers of all the elements of discontinuity of the market conditions, of the economic shocks.

Generally, fiscality impact on the activity of companies through the following mechanisms:

- -By direct mechanisms, i.e. the action of the fiscal policy on the amount of direct and indirect taxes paid by the economic actors;
- -By indirect mechanisms:

- Through the action of the fiscal policy on the amount of indirect taxes paid by the economic actors;
- Through the action of the fiscal policy on the amount of direct taxes paid by the natural persons;

-Through other mechanisms which impact on the activity of the economic actors – mechanisms which stimulate of inhibit their economic evolution.

In order to analyse the implications of fiscality on SMEs activity and identify solutions, it is necessary to show SMEs particularities which characterize them among the other economic actors. Thus, unlike the economic agents with high economic and organisational capacity, the SMEs are characterised by:

-Low variety of the offer
-Modest financial capacity
-Low market share
-Small capacity to implement marketing policies, particularly the competitional policies
-Modest financial stability

Given these characteristics and the following definitions currently accepted worldwide:

-"The category of the Small and Medium Enterprises (SMEs) consists of enterprises with a staff of less than 250 people and with an annual net turnover up to 50 million Euro and/or total assets up to 43 million Euro" (Fragment of Article 2 from the appendix to Recommendation2003/361/CE1);

-The national Bank of Romania (2011 presentation at BNR Dolj Branch), defines the financial stability as follows: the concept of financial stability has no established definition yet, or a standardized pattern or analytical framework for evaluation; the financial stability is noticeable in the situations when there is no systemic crisis in action; a financial system is stable when it is able the allocate efficiently the economic resources (spatially and temporally), to evaluate and administrate adequately the financial risks and to autocorrect when it is affected by exogenous shocks; in other words, the financial system is stable when it becomes able the exercise the function of intermediation, thus facilitating the performance of an economy an to absorb the shocks by correcting the imbalances due to adverse evolutions,to the above list of characteristics we may add the following functional aspect of both microeconomic and macroeconomic importance: the concern of the macroeconomic policies for the SMEs sector is important both for the macroeconomic stability and for the establishment of the infrastructure required by the implementation of the macroeconomic policy programs because the weight and importance of this type of economic organisation are determined, economically, by the proper performance of the economy, the small and medium enterprises employing 10-249 workers being the drive of the European economy, creating jobs and pushing the economy forward.

In 2011, 7% of the 22 million non-financial enterprises across the European Union were SMEs, employing 38% of the total number of employees; in all EU member states, in 2011, most non-financial enterprises were small businesses (93%) and just 0.2% were large companies. The highest proportion of SMEs was in Germany (18%), Romania and Luxembourg (both with 13%) and Austria (12%), while the lowest proportions were in Czechia and Slovakia (both with 4%); in most EU member states, the bulk of employed people were working in SMEs: Lithuania and Latvia (both with 51%), Estonia and Luxembourg (both with 49%), Bulgaria (45.5%), Germany and Romania (both with 44%). In six member states, the bulk of the employed people were working in small enterprises, particularly in Italy (46%) and Portugal (42%), while in the United Kingdom (46%) and France (37%), the bulk of the employed people were working in large companies.

Elements of fiscality impact on SMEs activity

There are several segments of interest and analysis regarding the impact of the macroeconomic policies on the economic market which allow identifying the optimal correlation between the proposed objectives and the necessity of implementing efficient strategies; among these segments there is the issue of fiscality impact in SMEs activity.

The macroeconomic importance of the SMEs is to be taken into consideration especially at the administrative level of coordinating the macroeconomic policies, given the following main aspects of SMEs activity on the market:

- -The proportion of the SMEs among the total group of economic agents means:
  - oLarge proportion within the GDP;
  - oHighly important for the economic independence/dependence on the regional market
- -The economic stability of the economic agents influences:
  - oThe economic stability of the market, within the functional assembly of the specific mechanisms, with a corresponding proportion;
  - oThe stability of the main elements if the economic market: demand and offer, within the same conditions of corresponding proportion.

This shows that the need to consider the presence of the SMEs within the economic market, when coordinating the macroeconomic policies, is not a purpose per se, but it derives from the importance of the existence and economic stability of the SMEs sector at the macroeconomic level.

Leaving from these aspects, and knowing that the economic stability of the SMEs can be stimulated, maintained or disadvantaged by strategies of macroeconomic policy, it is important to consider the correspondence between the macroeconomic objectives and the direction of action of the implemented strategies: the macroeconomic objectives can match or not the manner of influence of the macroeconomic strategies on SMEs activity.

Since the statistics on the:

- -Evolution of the SMEs number over the past 5 years:
  - oSMEs operating at the same parameters;
  - oSMEs which reduced their activity;
  - oSMEs which developed their activity
- -Number of Trade Register operations concerning the SMEs, over the past 5 years:
  - oRegistrations;
  - oStrikeoffs;
  - oChanges of the field of activity

don't show clearly the reason for these actions, we may say that fiscality is one of the factors impacting on SMEs activity. However, it is not the only factor of influence, being associated with other factors such as:

- -Quality of the microeconomic management, pertaining to several main issues such as:
  - oOptimal utilization of the marketing strategies to:
    - ▪Increase the market share;
    - ▪Diversify the offer according to the segments of clients with the view to increase consumption;
  - oOptimal utilization of the managerial strategies to enhance the efficiency of the internal processes with the view to:
    - ▪Reduce the operational risks;
    - ▪Cost optimization;
- -Influence of other factors of impact:
  - oOther macroeconomic policies
  - oEconomic shocks

in the subsequent part we will only make a theoretical analysis of the relation between fiscality and SMEs activity, an empirical analysis would be insufficiently relevant due to the scarcity of available information.

Thus, SMEs activity, of major importance for the economic market, both as direct effects of the activity of these economic entities:

- -Participation to the economic stability of the market by its main components – demand and offer – and stability of the economic flows correlated with those of other economic entities;
- -Contribution to GDP formation;

and as indirect effects, through:

- -Supplying jobs;
- -Other components of the demand and offer and of the economic flows on the market,

can be influenced, in terms of the fiscal policy coordination, in the following ways:

-Stimulate SMEs growth;
-Hinder SMEs growth;
-Neutral impact.

Solutions coming from the SMEs

In terms of SMEs specificity, the impact of the fiscal policy on SMEs activity is of the same type as the impact of the fiscal policy on the activity of other economic entities, particularly since there are two possible relations between the SMEs and the large companies:

-Competition on the market
-Non-competition.

Regarding these possibilities, the way in which the level of fiscality is experienced by the SMEs and by the large companies has the following impact:

-In the case of competition, the SMEs are disadvantaged because:
  - They have a more frail financial balance;
  - Have a lower access to sources of financing;
  - Have a lower level of (own and drawn) financial resources, which makes them more vulnerable to shocks;
-In the case of non-competition, the SMEs can be disadvantaged only if their market segments are targeted by the large enterprises.

A few solutions for the SMEs emerge thus, particularly given by the actuality of the problem, characterized by phenomena resembling to a financial crisis, which makes the state budget to seek cheaper, additional sources – compared to the situation of macroeconomic normality – from domestic resources, even if this is totally contrary to the objectives of economic growth. Some times the wrong decision of halting the economic growth is taken in order to fill some gaps in the budget which are not covered by the economic activities.

When there is the situation of competition between the SMEs and the large companies, the persistence of a high pressure fiscal regime is a further disadvantage for the economic stability of the SMEs, compelling their microeconomic management to seek solutions. Several such possible solutions can be:

-Establishment of SMEs consortia in order to preserve their market segments; this solution raising the following issues:
  - The issue of specialisation, of establishing a minimum complexity of the consortium, which to enable maintaining the functional stability of this consortium
-Establishment of mixed consortia, SMEs – financial institutions, intended to allow a higher access to financing of the SMEs and to add efficiency to the financial institutions which are currently confronted by problems generated by the lower demand of financial products and services.

When there is the situation of non-competition between the SMEs and the large companies, striving towards the same objective of maintaining their market segments, the potential solutions for SMEs management regard the economic cooperation, as follows:

-Industrial cooperation:
  - Underproduction:
    - Of capacity
    - Of speciality
  - Coproduction;
-Commercial cooperation:
  - Distribution;
  - Sales;
  - Other.
-Cooperation in the field of services:
  - Marketing;
  - Service activities;
  - Other.

All these are to be applied using the general pattern of cooperation between SMEs and large companies.

In the situation of non-competition, compared to the situation of competition, it is preferable to implement non-competitional solutions in the relation with the large companies because the large enterprises can also be part of consortia, and in this case the advantage of the SMEs will vanish being replaced by a new competitional formula, which is to the advantage of the large companies.
Reverting to the impact of fiscality, generally speaking, it touches on the financial situation of the particular enterprise by diminishing its gross income, and here there are two aspects to consider:

-The primary source to support future activities;
-The source of profit, not as significance of the financial gain, but as incidence, through the indicators of profitability, on the odds of drawing further financing.

The generic problem regarding this aspect is the fact that the bearability of the fiscal pressure by the SMEs – as economic entities with much lower financial power and access to sources of finance compared to the large enterprises, and which also have a more frail financial stability (with a higher risk of going unstable in case of possible market shocks) than the large companies – is more difficult for them than for the large companies because:

VN = VB – C – I
where
VN = net income
VB – gross income
C = expenditure
I = taxes
If we use the following equation
I = (VN × X) / 100
We have
VN (1 – ×/100) = VB – C

In the case of the SMEs whose gross incomes and expenditure are much lower, both in absolute terms and comparatively, than those of the large companies (the usual differences is of several times), the left side of the above equation also is much lower than that of the large companies. This means financial stability with a higher risk of unstableness compared to the large enterprises and lower financial power, even if the profit indicators are within the acceptable range from the point of view of the banks. However, the interpretation of the liquidity indicators in terms of value, particularly under the conditions of financial risks on the market, should lead to the expression of a moderate possibility of access to financing; from the macroeconomic point of view, this means economic stability with a high risk of turning unstable, and this happens whatever microeconomic solution the SMEs select as strategy of sustainability.
This is why we should also look at solutions which can come from the macroeconomic administrator.

Solutions coming from the system coordinating the macroeconomic policies

The business environment, due to the large number of SMEs that compose it, runs a high risk of economic instability, one of the causes being the high fiscal pressure.
For an efficient implementation of the macroeconomic policies, starting from the hypothesis that they rely on a strategy which agrees with the targeted objectives and with the complexity of the macroeconomic situation, an important objective, both at the macroeconomic and at the microeconomic levels, is to reduce the risks of instability on the economic market – as essential element for the implementation of the macroeconomic policies – to identify all the factors that are likely to cause instability of the economic market and to seek ways to reduce their impact through macroeconomic strategies and programs.
Thus, the macroeconomic policies, the fiscal policy and the budgetary policy particularly, might take into consideration the ease the fiscal pressure – as an element which may loosen the total financial pressure on the business environment – thus stimulating the economic activities. The lower revenues to the budget (from direct and indirect taxes) will be compensated by higher economic flows, as the market activities grow, whose early noticeable effects might be a higher consumption, demand and production.

The reference to SMEs, as target of the analysed issues, is important both in terms of their proportion on the economic market, and in terms of the interest of the large companies to externalise some internal activities which, at the microeconomic level, are cost centres, thus enhancing the efficiency of the internal activity, while creating, at the macroeconomic level, a niche specific to SMEs development within the framework of stable and functional market relations with real capacities of development.

Outcomes of implementing the recommended solutions

We may notice first, as it should implicitly be considered, that the macroeconomic and microeconomic strategic objectives are convergent, the optimal modality for acquiring efficiency and efficacy of implementing strategies in the economic market being the collaboration of the macroeconomic and microeconomic levels and the correlation of the implemented measures.

Thus, due to the role and macroeconomic and microeconomic importance of the SMEs in particular, and of the business environment, in general, the reduction of any kind of economic pressure, the financial pressure being the most important and the fiscal pressure its instrument of regulation, contributes to the reduction of the risks to the economic stability.
The risks of macroeconomic instability may be divided in:

-Risks due to internal factors;
-Risks due to external factors.

The fiscal pressure above the level which stimulates the economic activities, as it has been shown in this analysis, becomes a risk element depending on internal macroeconomic factors which should be, and must be, correlated as size with the macroeconomic objectives supporting the economic evolution.
Thus, the higher stability of the economic market – as basic element of implementing the macroeconomic policies – the efficiency of implementing the macroeconomic programs can be improved so as to support the macroeconomic sustainability, as basic strategic objective.
Another aspect of the emerging benefits is the participation in foreign economic relations, at the macroeconomic and microeconomic levels, and this shows the necessity to look comparatively at the two situations, i.e. the national macroeconomic stability and the macroeconomic stability of the correspondent entities. The increase of the general economic efficiency – the macroeconomic stability of the market being part of it – is a necessary element for the development of the international economic relations.
The capacity of receiving and macroeconomic absorption of the shocks – due to the participation in international economic relations and to the internal microeconomic evolutions – also is of major importance. The capacity of receiving the shocks is directly proportional to the reduction of the risks of economic instability of the domestic market.
Within such international circumstances, the situations of macroeconomic imbalance are an almost general problem. More than that, the trends and the increasingly serious adverse macroeconomic problems only worsen the situations of imbalance. Under such conditions, the possible balancing of an imbalanced foreign payment balance is no longer a priority for the system of macroeconomic policies, first of all because the implementation of macroeconomic programs aiming to alleviate the imbalance situation is now primordial. Also, the implementation of complex macroeconomic policy measures to balance again the foreign payment balance is necessary, but secondary as importance to the solution of the general macroeconomic situation, subsequently becoming the premises of later macroeconomic achievements. More over, within such international conjuncture there is an imminent risk of worsening the situation of the foreign payment balance, particularly if the access on the foreign markets becomes limited as it depends on imports. The only solution, for such cases, may be to facilitate the access of the local products and services on the domestic market, thus replacing at least part of the imports, which will eventually limit the imbalance of the foreign payment balance.
In terms of perspective, the general strategic objective is the sustainability, which presumes the efficient and performing administration of the situation of macroeconomic balance. For instance, during a long term period situations of macroeconomic imbalance may appear on the background of the sought sustainability; the occurrence of such periods, within an international conjuncture as the current one, is inherent. The emergence of imbalances means the

manifestation of shocks, at least theoretically. Practically, however, such situations, depending on their duration and intensity, may still remain within the trend of sustainability, provided they are monitored by the macroeconomic administrative system. The imbalance of the foreign payment balance can be included in this category of macroeconomic phenomena. In such situation, the main macroeconomic administrative problems are:

-Limiting the extensive and intensive development of the shock;
-Monitoring the phenomenon so as to identify the opportunities and limits;
-Use such management of opportunities, so as to:
  - Facilitate the use of the lower pressure on particular areas of the macroeconomic policies to redirect these measures towards other macroeconomic objectives;
  - Amplify the opportunities so that their utilization:
    - Counteracts the shock;
    - Contributes to the accomplishment of other macroeconomic objectives;
-Administer the phenomenon so as to identify and use the optimal moment to implement measures which to stop the shock.

As mechanism of intervention by the administrative system of the macroeconomic policies, the emergence of such a phenomenon within a national economy focuses the attention on the administration of the shock as shown above. This is the administrative situation of the occurrence and evolution of a phenomenon generating macroeconomic shocks. The variants of this situation can be distinguished depending on the number of generated shocks. The importance of putting this problem forward is defining for the activity and particularly for the results of the macroeconomic administration, under the conditions of targeting the proposed objectives. The higher are the number, variety and complexity of the shocks, the higher is the number of macroeconomic limits, while the possibility of a correspondingly high number of possibilities becomes increasingly uncertain. Solving such situations requires the activation of a correspondingly high number of macroeconomic policies and measures, this being a concrete example for the promotion of the idea of functionality of such a macroeconomic system according to the pattern proposed above. A particular case of this generic situation is the sequential appearance and action of the shock-generating phenomena, when there is an interval associated to the action of the shocks; the longer is this interval, the higher is the risk of meeting the strategic goal of sustainability. Under these circumstances, the pattern of the macroeconomic policy actions must be amended towards the reduction of removal of some shocks, first of all those which have several limits and fewer opportunities associated to them and on which there are lower possibilities of monitoring and administration.

One of the potential international macroeconomic risks – risks which define the current period from the point of view of the economic stability, is the volatility of the financial resources. It can be the result both of the phenomenon of economic globalization – seen phenomenologically through the prism of the phenomena of regional economic polarization, and of the processes of economic integration which, during the early stages of establishing an economic union, are associated phenomenologically and motivationally, to the phenomena of economic polarization occurring within the process of globalization, overlapping them and acting against the regional economic integration.

Having in mind the definition proposed for the concept of financial stability, the evolution of the phenomena of regional economic polarization may induce financial instability due to the higher volatility of the financial assets amplified by the actions on the financial market.

The increase of the regional financial instability, as shown by this phenomenological pattern, in the areas undergoing economic polarization may generate:

-The trend of polarization of the regional financial resources, corresponding to the economic polarization;

which determines:

-Wider gaps between the conditions of the economic market in the different areas of the region

This entails risks in several directions:

-Trend of widening the gaps between the levels of economic development of the areas composing a region, which also increases the risk of shocks within the regional economic relations;
-Higher risk of evolution of phenomena opposing the objectives of economic integration

Given the model of the European Union, and the current stage of the process of European integration, there are two phenomenological and active forms that overlap:

-Process of European integration;

-Phenomenon of economic polarization associated to the phenomenon of globalization.

The relation of the two phenomenological forms with the financial stability consists in the fact that as the phenomenon of regional economic polarization develops, this is expected to cause an expansion of the areas with economic polarity due to the gradual inference in the segments of the regional market, the expected outcome being fainter differences in the market conditions among the areas of the region.

Given this economic pattern and the current stage of evolution of the process of European integration, with early stages of the phenomenon of economic polarization, it is important to keep in mind, for the purpose of this analysis, that the phenomenon of economic polarization is associated to the phenomenon of financial assets volatilization in the areas undergoing economic polarization. This occurs mainly through the associated phenomenon of financial polarization which, associated to the options generated by the movement of funds on the financial markets, leads to the imbalance of the financial stability. This form of imbalance is most probably rather short, until a new state of financial balance is reached, at lower levels compared to the previous state of stability however, temporally located before the onset of the regional financial polarization.

Consequently, the evolution of the phenomena of economic and financial polarization triggers a chain of events of financial stability unbalancing whose outcome is a substantial difference between the levels of financial stability of the different areas of the region, which opposes the interest of the project of economic integration, hindering its evolution.

The further evolution, according to the mentioned economic pattern, may lead, if no risky phenomena occur within the region, to fainter economic differences between the regional areas following the expansion of the economically and financially polarized areas; the levels of financial stability in the different regional areas resettle and it may even be possible to have financial stability as one of the objectives of the process of European integration.

This potential economic pattern of the onset and evolution of the state of financial instability comes in gradually starting from an outflow of resources for the economic growth – maybe on the background of the principle of globalization and establishment of areas of economic polarity – which generate macroeconomic frailty, thus creating conditions for the further development of the phenomena of financial instability, mainly as:

-Imbalances of the relation between the demand and offer specific to the financial market due to:

  - The lower number of actors on the financial market;
  - The lower correspondence between the offer of the financial market and the GDP, due to the trends of decreasing GDP;

-Higher macroeconomic frailty due to the lower potential for economic growth, starting from the same misbalancing of the demand-offer relation with its effects, which further increase the risk of adverse macroeconomic shocks and phenomena on the background of macroeconomic imbalances which also generate further effects.

Conclusions

The importance of ensuring a state of financial stability at the national macroeconomic level, particularly within the context of the running process of European economic integration, results from the following aspects:

-The financial stability is one of the defining qualitative aspects for the equilibrium of a macroeconomic system;

-The financial stability is an indicator for the option of investments and placements for the particular macroeconomic area;

-Exceeding the limit of acceptable volatility of the mobile financial assets is an indicator of the financial risk which, within the configuration of the European economic relations, may produce effects transmitted through the channels specific to the process of economic integration;

-The relation between financial stability and monetary stability is given both by the objective of preserving the macroeconomic equilibrium and by the functional relation between the macroeconomic administrative system and the real economy;

-The distortion of the financial stability may also be a result of the distorted monetary stability;

-The two types of stability result from the state of macroeconomic stability;

-Regarding the factors of influence of the two types of stability, both are multivariable functions, some of the variables being commune to the two functions;

-Regarding the administrative action towards ensuring the two types of stability, it is multidisciplinary, multi-institutional and submitted to the process of regional economic integration;

-Regarding the quantification, the level of stability must be seen as belonging to an interval with limits set as acceptable in terms of the risk factor;

-Institutionally, the activities of ensuring the states of financial and monetary stability are included in the macroeconomic administrative system and they are connected to the process of institutional and technical-methodological construction in Europe.

The monitoring of financial instruments utilization, the macroprudential analysis included, must focus on the whole financial system, this type of monitoring being of utmost importance to identify the potential sources of instability, to limit the risks and to avoid the high costs of solving the potential situations of major risk. Therefore, it is necessary that these surveillance methods, the combination of the monitoring and regulatory activities, must be relevant for the particular conjuncture and in agreement with the targets, reliable, easy to implement and to standardise. The accounting standardization is important for the easy implementation of such surveillance activity; the periodical systemic stress tests being important for the analysis of the potential adverse macroeconomic impact of the shocks within different economic conditions and with different responses of monetary policy.

The market infrastructure is central because the financial stability is very much influenced by the environment in which the financial intermediaries operate. Just like there are cultural differences, there also are structural differences between the countries. The nations have a diversity of political and economic systems, of legal frameworks and taxation structures, which play a central role in the development of their financial systems. These national influences can certainly interact and distort the practices and procedures on the regional financial markets.

Some risks of financial instability are susceptible of appearing now and then and therefore, the formulation of a properly articulated strategy against the potential financial imbalances should be a priority on the agenda of the central banks and of the surveillance authorities.

Such strategies should cover the following areas: consistent political framework at the macroeconomic administrative level which to enable the implementation of a coherent framework of macroeconomic policies – which is essential for the maintenance of the financial and monetary stability. The framework should be thorough in attaining the macroeconomic goals and should avoid the accumulation of imbalances which may lead to financial instability. The supply of market orientations to the participants regarding the way in which the policy works facilitates the decision-making process at the microeconomic level. Furthermore, the flexibility to react to the shocks which often affect the economy helps attenuating the risks of financial crisis generation.

At the regional level, in close connection with the mentioned conditions, the adoption of common standards which to boost the levels of adherence and convergence to the quality standards and practice standards is one of the key-elements for the efficient allocation and use of the economic resources, which is expected to decrease the capital costs and the reduce the use of the house of arbitrage for regulation.
The increasing globalization and interdependence of the world economy force the financial intermediaries to operate on a much wider field, which is important to take into consideration both regarding the potential of increasing risks and regarding the necessity of applying in due time specific regional and cooperation programs which should reduce the imminence of such

risks, under the conditions in which the regional markets had been functioning for many years and developed faster than the administrative activities which should have associated to them. These strategies should also encourage the development of efficient and prudent internal risk management systems, their proper monitoring and administration in agreement with the requirements of regulation of the risk management practices and with higher risk transparency.

The market discipline, another essential and indispensable element of the financial stability, must be promoted by a prudential and surveillance regulation which to allow and impose the performance of the specific market activities in a framework associated to the necessity fort financial stability.

As final conclusion, the correlation of the fiscal pressure with the market potential is defining for the macroeconomic stability; the central problem of this analysis is the macroeconomic stability – as necessary condition for the economic evolution within the current circumstance – condition which also includes the general problem of the correlation between the elements of macroeconomic strategy and the market potential.

The central idea of the analysis is the correlation of the fiscality level with the economic agents' capacity of absorption of the fiscal pressure in general, and of the SMEs in particular, capacity of absorption which pertains to the general capacity of the economic market to absorb the economic shocks, being one of the essential elements of the macroeconomic stability.

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FINANCIAL AND MONETARY CHALLENGES

LINKS BETWEEN MAJOR STOCK MARKET INDEX QUOTES AND BITCOIN CURRENCY DEVELOPMENTS

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Ph.D. Alina Georgeta Ailincă [25]

Abstract:

Virtual currencies have been characterized by extreme volatility, since the emergence in 2009 of the bitcoin currency that was followed by the launch of several thousand other virtual currencies, of which about 1600 have survived to date, with a maximum capitalization of $ 200 billion in December 2017, many factors influencing their price evolution. The study aims to analyse whether the evolutions in the capital markets influence the crypto market.

Keywords: *Virtual currency, capital market, crypto market*

JEL classification: *E30, G41, O16;*

Introduction

The current world is facing massive stability problems and financial stability seems to be a central element of these problems. Cryptocurrencies, which have emerged relatively recently, cause, with or without intention, serious problems in the global financial balance. As we can see, the principle of communicating vessels reflects rather well the links between the evolutions of the capital markets and cryptocurrencies. This issue is analyzed in this article.

Literature review

In order to discuss in detail about features and how it works cryptocurrencies we should first start from their definitions, but this isn't an easy task. First we might say that cryptocurrencies are using the cryptography technique and are secured using public and private digital keys (Houben, R. and Snyers, A., 2018, Faulkner, J., 2016).

The European Central Bank defined cryptocurrencies as a form of unregulated digital money and has classified them as a subset of virtual currencies, being accepted and used among the members of a specific virtual community (ECB, 2012). The Bank for International Settlements (BIS) in the Committee on Payments and Market Infrastructures (CPMI, 2015) has qualified cryptocurrencies as digital currency schemes which have zero intrinsic value but its value is determined by demand and supply as any other commodities, - are not operated by any specific institution or individual, - allow remote peer-to-peer exchanges of electronic value without the need for intermediaries.

Thus, beyond the definitions we can say that there are many supporters of cryptocurrency but also many opponents (e.g. Matonis, 2011; Yermack, 2014, Andreas, 2018 etc.). Thus, it is quite unclear even for international financial authorities how the cryptocurrencies will evolve and what impact will have (CPMI, 2015). Also, the most interesting opinions and studies are those which anchor the evolutions of cryptocurrency to the nominal or real economy (Ali, Barrdear, Clews and Southgate, 2014; Baumohl, 2018 etc.), but this domain is still in development. Thus, the present paper tries to bring its piece of novelty.

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Methodology and Data

This study analyses the impact of the main US stock exchange rates (DOW JONES, S&P, NASDAQ) on bitcoin rates.

It is noteworthy that during the surveyed period (December 2016 –December 2018, the most significant in terms of volume and number of transactions), the price of bitcoin cryptocurrency reflected the evolution of the main international stock exchange indices, and that the "crash" of the rates for the main stock exchange indices (S&P, NASDAQ, DOW JONES) are elements with a much stronger impact on the depreciation of the bitcoin, than the spectacular increases of the stock exchange indices. The hypothesis to be checked is that is that the evolution of the market for cryptocurrencies follows the evolution of the market for capital.

The cryptocurrencies are considered highly volatile financial assets, with high risks, and when panic strikes the capital market, this panic propagates directly to the crypto market too.

The case study focuses on the impact of the rates for the main US stock exchange indices on the bitcoin. A reverse analysis, of the evolution of the cryptocurrencies on the capital market would be equally interesting, but the lack of relevant data – volume of all transactions with cryptocurrencies only in the US, makes this case study impossible.

Our paper uses data from the international statistical databases available online, regarding the main US stock exchanges. The surveyed period reflects data availability and relevance. For the econometric analysis we monitored the period 2016-2018, daily information starting with December 8, 2016, to December 6, 2018. The daily frequency is presumed by systematization and relevance of such indices. The econometric analysis used the Excel - Data Analysis software.

Results

Starting from the importance of the minimal rates, if we monitor the evolution of bitcoin and of the main stock exchange indices rates, one may notice (Figure 1 and Table 1) a strong and positive correlation between the evolution of the bitcoin and of the stock exchange indices for the period December 2016-December 2018.

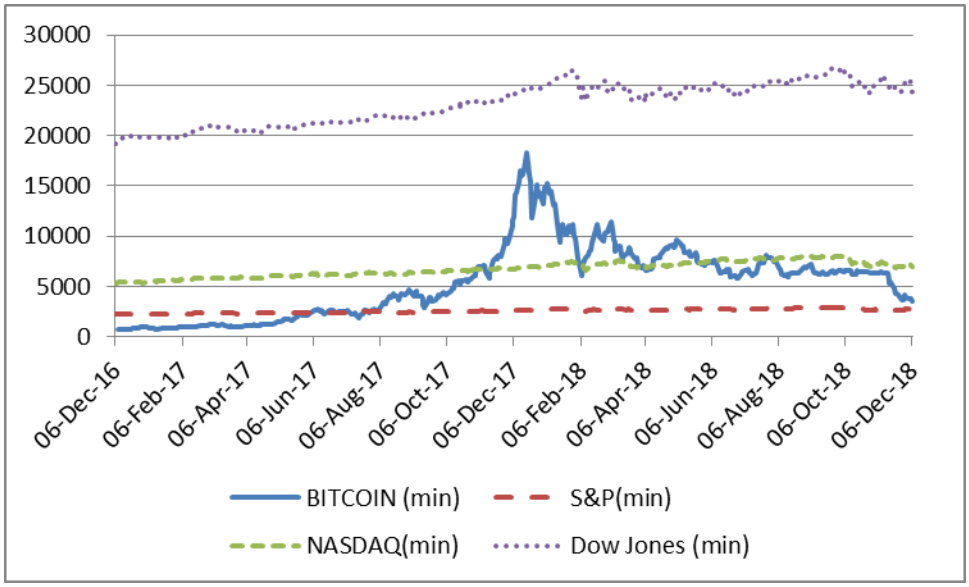

Figure 1 – Evolution of the minimal rates of the bitcoin and of the stock exchange indices – S&P, NASDAQ, Dow Jones in the interval 6.12.2016-6.12.2018

Source: http://coinpaprika.com, https://finance.yahoo.com/

Table 1

Correlation matrix between the minimal rates of the bitcoin and of the main stock exchange indices

	BITCOIN (min)	*S&P (min)*	*NASDAQ (min)*	*Dow Jones (min)*
BITCOIN (min)	1			
S&P (min)	0,731624928	1		
NASDAQ (min)	0,686546373	0,988288866	1	
Dow Jones (min)	0,783248039	0,987634021	0,963905024	1

Source: authors processing; data from http://coinpaprika.com and https://finance.yahoo.com/

If the evolution of volumes is also analyzed, the link between bitcoin and the main international stock market indices is maintained, but this reflects to a lesser extent the positive and direct correlation between the analyzed elements (see Table 2).
If we analyze the connection between bitcoin and the main international stock exchange indexes on closing quotations, we can see that the correlation is maintained (see Table 3), but to a lesser extent it reflects the positive and direct relationship between the analyzed elements.

Table 2

Correlation matrix between the trading volumes of the bitcoin and of the main stock exchange indices

	BITCOIN (volume)	*S&P (volume)*	*NASDAQ (volume)*	*Dow Jones (volume)*
BITCOIN (volume)	1			
S&P (volume)	0,072182967	1		
NASDAQ (volume)	0,182205393	0,795416843	1	
Dow Jones (volume)	0,321474883	0,780894439	0,650338107	1

Source: authors processing; data from http://coinpaprika.com and https://finance.yahoo.com/

Table 3

Correlation matrix between the closing quotation of the bitcoin and of the main stock exchange indices

	BITCOIN (closing)	*S&P (closing)*	*NASDAQ (closing)*	*Dow Jones (closing)*
BITCOIN (closing)	1			
S&P (closing)	0,713526937	1		
NASDAQ (closing)	0,664363941	0,988452842	1	
Dow Jones (closing)	0,764753257	0,988190694	0,963804029	1

Source: authors processing; data from http://coinpaprika.com and https://finance.yahoo.com/

Analysing the relation between the maximal rates of the bitcoin and the main stock exchange indices, one may notice that the strong correlation remains, but it reflects to a lesser extent the positive and direct relation between the analysed elements than the closing and minimal rates.
Thus, it is checked the hypothesis that the relation between the evolution of the maximal rate of the bitcoin and the maximal rates of the main stock exchange indices (S&P, NASDAQ and Dow Jones) is strong. However, the correlation is weaker than when the minimal rates of the bitcoin and of the selected stock exchange indices were used.

Based on the correlation matrices, we only considered the relation between the evolution of the minimal rates of the bitcoin and of the main stock exchange indices.
Thus, for the calculation of the regression equation showing the relation between these two elements, we only monitored the indicators with rather strong correlation.

Table 4

Correlation matrix between the maximal rates of the bitcoin and of the main stock exchange indices

	BITCOIN (max)	*S&P(max)*	*NASDAQ(max)*	*Dow Jones (max)*
BITCOIN (max)	1			
S&P(max)	0,705789306	1		
NASDAQ(max)	0,653548951	0,98863445	1	
Dow Jones (max)	0,755820621	0,989038584	0,964425267	1

Source: authors processing; data from http://coinpaprika.com and https://finance.yahoo.com/

Table 5

The result of the regression equation regarding the link between the minimum quotes of bitcoin and the stock market indicators (S&P, NASDAQ, Dow Jones between 8.12.2016-6.12.2018)

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0,8291385
R Square	0,6874706
Adjusted R Square	0,6855879
Standard Error	2032,7711
Observations	502

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	3	4,527E+09	1508857607	365,14999	2,5007E-125
Residual	498	2,058E+09	4132158,373		
Total	501	6,584E+09			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-18764,925	4159,139	-4,511	8, 03E-06	-26936,548	-10593,301	-26936,54	-10593,30
S&P(min)	-22,142	6,227	-3,555	0,0004129	-34,377	-9,907	-34,377	-9,907
NASDAQ(min)	-1,845	0,936	-1,971	0,0492716	-3,685	-0,005	-3,685	-0,005
Dow Jones (min)	4,045	0,328	12,300	1,509E-30	3,399	4,691	3,399	4,691

Source: authors processing; data from http://coinpaprika.com and https://finance.yahoo.com/

Thus, the simple regression model proposed for the study of the evolution of the minimal rate of the BITCOIN (St), is analysed depending on the minimal rates of S&P, NASDAQ, Dow Jones (Xt) and has the following simplified formula:

$BITCOIN_{min}$= f($S\&P_{min}$, $NASDAQ_{min}$, Dow $Jones_{min}$) sau

$BITCOIN_{min}$=c(1)+c(2)*$S\&P_{min}$+c(3)*$NASDAQ_{min}$,+c(4)* Dow $Jones_{min}$+εt

Analysing the value of the determination coefficient, R^2, used to measure the intensity of the correlation between the endogenous variable and its determinants, one can notice that the value of 0.68 is good, value also maintained by the adjusted R^2, which suggests a strong correlation between the model variables.

One of the problems of any regression model is the way of determining its parameters. In this case we used the generalized least squares technique, also incorporated in Data Analysis or Excel data analysis software.

The use of this instrument allowed us to estimate the model parameters. The values of the coefficients estimated for the sample are as follows: c(1) = -18764,925, c(2) =-22,142355, c(3) = -1,8456491 and c(4) = 4,045559.

Coefficient c(1) shows the minimal bitcoin value if the value of the other variables is zero, while coefficient c(2) shows the increase of the minimal bitcoin value when the minimal rate for S&P increases by one unit. Coefficient c(3) shows the increase of the minimal bitcoin value when the minimal rate for NASDAQ increases by one unit. Coefficient c(4) shows the increase of the minimal bitcoin value when the minimal rate for Dow Jones increases by one unit.

The values of the coefficients show that their sign is positive only for the rate of Dow $Jones_{min}$, which shows that the correlation of this indicator with the evolution of $BITCOIN_{min}$ is direct, while the correlation between the rates of the other stock exchange indexes and the $BITCOIN_{min}$ is reverse.

Table 5 data show that most coefficients are significantly different from zero, have an associated probability, a p-value below 0.05, which confirms the fact that they are significant within the total statistical population and that H0 null hypothesis is rejected for these indices. We may, therefore, conclude that the model was correctly specified and evaluated and that the influence on the dependent variable ($BITCOIN_{min}$) comes from these factors.

All the results we obtained are of good credibility, as the number of observations is significant (502 records). Unfortunately, the study revealed the correlations between the daily evolutions of the indices, and we have no possible correlations for these indicators for periods other than one day.

The results of this case study can be completed by a broader study in which, along with the stock exchange rates, we might study other macroeconomic variables too.

It would be interesting to analyse the relation between the economic evolutions of the economies (savings) that allow transactions with cryptocurrencies. This aspect would also be interesting in the opposite direction, more exactly – the evolution of the bitcoin on those economies.

In order to eliminate any doubts about the existence and strength of the links between the analyzed elements, we mention that in another study of ours were we additionally confronted with problems of lags and the connection of bitcoin with major international exchange rates, the Augmented Dickey - Fuller Unit Root Test and Standard Granger Causality Test confirmed the results mentioned above.

Conclusions

The case study is an attempt to connect information on the bitcoin in relation with the main stock exchange indices, Dow Jones, S&P, NASDAQ.

The main purpose of the case study was to provide understanding on the relations between the analysed elements, with the purpose to anticipate the future evolution of the bitcoin and of other virtual coins too, as basis for the a more rigorous regulation of the cryptocurrencies.

The case study focuses on the analysis of the impact of stock exchange indices on bitcoin evolution. The evolution of the bitcoin can be shown by econometric analysis using statistical data for specific periods, e.g. daily data for the interval December 8, 2016 to December 6, 2018.

The correlations between the analysed elements and the regression equation taken into consideration support the hypothesis that the stock exchange evolutions, particularly during the period of strong depression, have a significant negative influence on the bitcoin.

The extremely favourable evolution of the stock exchange also has a strong positive influence on the bitcoin, but not as strong as the “crashes” of the capital market.

The closing rates also have strong information value for the evolution of the bitcoin, but lower than the minimal rates, particularly as the bitcoin is often traded during the days that are officially nonworking days, which the stock exchange operators observe. Thus, the bitcoin traders can “reflect” more on the closing rates of the stock exchanges and take decisions that strengthen the relations between the cryptocurrency and the stock exchange rates.

Regarding the volume of transactions, the relation between the volume of virtual coins and the volume of the stock exchange assets maintains, being in a direct correlation, but the relation is much weaker.

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INCREASING THE ROLE OF THE SPECIAL DRAWING RIGHTS (SDR)

Ph.D. Lucian C. Ionescu[26]

Abstract:

The present stage of the development of the international and financial system requires a substantial and significant increase of the Special Drawing Rights (SDR) functions both for resolving or at least mitigating crisis phenomena and for strengthening the stability and functioning of international monetary & financial relations. Although the `second amendment` of the Articles of the Agreement (IMF Statutes), since 1978, offered a large basis for developing the SDR role, in practice, the SDR's role and functions have been quite limited. The inclusion of the Chinese yuan (renminbi) in defining SDR (2016) gave a kick-start to the debate regarding the important role that the SDR could play.

Keywords*: Special Drawing Rights (SDR/XDR); monetary, financial and economic indicators; substitution account; international monetary standard.*

JEL classification*: E4, E5, F3.*

According to «IMF Financial Operations – 2018 », the creation of the SDR was meant to improve the way the international liquidity is managed, based on "international consultation and decision." Notwithstanding this `good intention`, in our view, the main brake for increasing the role of the SDR resides in a formula constantly repeated in the IMF documents and declarations: "The SDR is neither a currency nor a claim on the IMF. Rather, it is a potential claim on freely usable currencies of IMF members. SDRs can be exchanged for these currencies. (…) SDR can only be held by IMF countries and not by individuals, investment companies or corporations."[27] However, at the same time, it is mentioned that SDR "play a crucial role in maintaining macroeconomic stability and global growth by providing emergency liquidity and credit when traditional methods fall short."(Idem) It is evident that due to quite different – if not directly opposing – interests, IMF attitude is hesitant and, sometimes, even duplicitous. In our view, the main cause lies in the ambivalent position of the USA as regards the SDR's role. On the one hand, there is an obvious interest in avoiding a high responsibility of US dollar (USD) in settling the IMFS's problems, but, on the other hand, there is a permanent tendency to prolong as much as possible the advantages arising from the USD *de facto* dominant position as the main component of the international monetary & financial reserves. Since 1978, there has been an increasing scission between *de jure* and *de facto* functioning of the IMFS. The relation between the effective roles of SDR and USD has been in the centre of this intricate puzzle.

In the aftermath of the Global Financial Crisis (GFC), there has been a new impetus to debate the SDR's role and to propose measures for strengthening the international monetary and financial system (IMFS). China and the emerging economies group have proved to be quite active, especially since Renminbi (CHY) has entered the SDR basket (2016). In this context, Danyi Zhao [28](Jinan University) has summarised that "the SDR have three main functions: first, as the national reserve assets, the total amount of SDR in the world remains unchanged. When the balance of payments occurs, the IMF negotiates to regulate countries to carry out SDRs and a basket of currencies to keep the balance of payments; second, IMF member countries can directly use SDR to repay their loans, interest and other expenses in the IMF; third, IMF member countries can use

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[27] *IMF Factsheet, March 8, 2019.*

SDR loans as gifts or conduct various financial businesses.(…) After the inclusion of RMB in the SDR currency basket, the GDP of the economies of all countries in the SDR basket accounted for a larger proportion of global GDP, which was 71% in 2016, … compared to 56% in 2015. (…) Including China's official currency into the SDR basket shows the determination to reform of SDR and IMF…"[29] Another beneficial effect of co-opting Chinese yuan (renminbi) in the SDR basket has consisted in a remarkable decrease of SDR's interest rate.

Since SDR evolution became the core of the `second amendment` of the articles of the IMF Agreement, important decisions have been taken only under the pressure of crisis phenomena or grave disequilibria in the world economy (1967-73; 1978/79; 2009; 2015/16). One should remember that between end-1980s and beginning of 2000s, the amount of loans granted by IMF to member countries dramatically decreased until the GFC, putting a question mark on the future role of the main international monetary institution. In a way, one could say that GFC `saved` the importance of IMF. Gradually this reality has begun to be recognized by the IMF itself: "… Episodes of stress point to some weaknesses, including external adjustment mechanism; limitations of official liquidity provisions; and large-scale reserve accumulation – with systemic side effects. Those weaknesses, together with the expansion of the SDR basket, have renewed interest in the SDR…"[30] After more than a decade since GFC burst, in a difficult international climate, new debates and disputes have been initiated concerning the way the IMFS should be renovated. Consequently three concepts have been introduced in defining SDR: the official SDR, as the reserve asset administrated by IMF (O – SDR); SDR as a unit of account (U – SDR); and the SDR – denominated financial instruments in the market (M – SDR).

IMF Executive Board organised a seminal debate on the role of the SDR (in April 2018). It is important that it has been finally acknowledged that despite the aim of the Second Amendment of the Articles of Agreement to transform the SDR into `the principal reserve asset in the international monetary system`, the SDR's role as an international reserve asset has remained very limited: actions/initiatives "in both the U – SDR as the unit of account to price international trade…, and M – SDR as the denomination for financial instruments such as bank deposits, loans, or securities, has been sporadic…"[31] Here is a little bit of hypocrisy: it is well known that the USA (together with some western developed states) have not been interested to favour a too rapid and/or substantial takeover from US dollar to SDR's effective role in the IMFS. This `forward/backward play` and `stop & go` tactics seem to continue to be the preferred game by the IMF Executive Board as regards the role and functions of SDR: "Many Directors noted that the 2009 SDR allocation played an important role in mitigating the impact of the GFC. Nevertheless, many Directors also considered that such allocations could raise moral hazard concerns."(idem) It is at least strange to refer to `moral hazard concerns` after a decade of *quantitative easing* programmes launched by the central banks (in close cooperation with treasuries/ministries of finance) of the most developed states and which amplified the risk of *moral hazard*, being contrary to the basic principles and functioning of a – more or less - `free market` economy. Positioned closer to the true cause of this contradictory attitude, `other Directors` mentioned that a more important role allotted to SDR allocations "would blur the distinction between conditionality-based Fund lending and the role of the SDR as reserves." Nevertheless, during GFC, IMF representatives recognised that, especially in the 1980 - 2000 period, under the neoliberal doctrine pressures, imposed excessive constraints mainly on developing and emergent economies which had borrowed loans from the IMF (often jointly with the World Bank). Such an example has been the obsessive insistence for `absolute` freedom for international capital flows (an important part of which was of a speculative origin and nature).

Another way of postponing effective decisions for increasing the SDR's role, despite the provisions of the Second Amendment, is, in a perverted way, to consider that empowering and enlarging the SDR's role and functions "would require amending the Articles of Agreement and resolving a number of operational considerations…" (idem). In reality more provisions of the Second Amendment still wait to be implemented and others have been only partially observed. However it

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[29] D. Zhao, *Study on the Influence of RMB's Entry into SDR,* in American Journal of Industry and Business Management, *2019, no.9.*

[30] IMF, *Policy Papers,* April 11, 2018.

[31] IMF, *Press Release, No. 18/126*

is possible to witness a rather surprising speeding up of the decision making process regarding the SDR's role due to the alarming signals, that seems to multiply since mid-2019, enhancing the probability of an international recession in the near future: "…Economic growth has fallen back across the developed world. Some blame this on a slowing of innovation and productivity…I see the issue differently – the struggle to revive the world economy is the result of the disequilibrium that led to the crisis itself."[32]

`Normalising` monetary policy has already been forgotten or at least downgraded. Here follows the reference interest rates (in %) of the main central banks in 2019 (Q III) – source *Trading Economics*: USA: 1.75/2; Canada: 1.75; UK: 0.75; Euro Area: 0.00; Japan: -0.10. China is an exception: 4.25 (Aug.). In this context, President Trump's virulent attack addressed to The Federal Reserve Board for `keeping too high the interest rate` level has been in a certain conflict with the rather bombastic appraisal of the `force and efficiency` of the American economy. Therefore, at the end of October, Fed reduced the interest rate to 1.50/1.75%. China also cut the interest rate to 4.15 in November (2019). As regards the Euro Area and Japan, the 0.0% and a negative interest rate clearly show a stagnant evolution.

Transforming SDR in a major component of international reserves has become a priority which requires a series of prerequisites, but, at the same time, offers a historic chance of profoundly improving the stability and the functioning of IMFS. In our view, first of all it is needed a gradual removal of the `umbilical connection` between IMF and SDR. Undoubtedly it was necessary that the SDR to be created under the auspices of the main institution of the international monetary and financial community. Now it is high time to let SDR to fly/circulate according to the laws and mechanisms specific to the world economy. Certainly the coordination and guiding by the IMF will preserve its role. There are yet a lot of lessons to be learnt and many a mistake to avoid if we are referring only to the last 2 – 3 decades: "…Because SDRs are merely claims on hard-currency reserves…, their emission has no further value once the outstanding SDR claims is sufficient to purchase the outstanding stock of gross currency reserves."[33] Substantially increasing the SDR role would represent a rare opportunity to stimulate productive investment and drastically diminish pure speculative capital flows which, as it is well known, were a main cause of GFC and of the prolonged stagnation afterwards – an eloquent expression of the rift between nominal and real dimensions of the economy: "Notwithstanding the practical obstacles to a substitution account, a reserves system largely based on the SDR would have some advantages. Through allocating new SDRs…, the IMF could influence aggregate world reserve growth and… make it less erratic."[34] Increasing the role of the SDR would also counteract the temptation of issuing all sorts of `crypto-currencies` which imply the major risk of volatility, instability and voracious monetary speculation.

As the gold exchange standard (*de jure*) functioned under the form of the US dollar exchange standard (*de facto*) after the World War II until 1971/73, since 1978 `second amendment` to the Articles of the IMF Agreement there has been a *de jure* commitment toward a SDR standard which, until nowadays, functions as a *de facto* USD exchange supplemented by SDR allocations. In this perspective, there may be conceived several stages of `liberalising` the international SDR circuit: (i) payments or loans effectuated inter – central banks of the IMF member states, informing IMF but without a special need for approval; (ii) issuing new tranches of SDR especially meant for the real sector of the economies, being strictly *discouraged speculative financial operations*; (iii) the possibility of issuing bonds by Treasuries/Ministries of finance denominated in SDR (speculative operations being forbidden). Certainly a specific market infrastructure should be set up, preferably under the guidance of IMF experts. The phases suggested also prepare the road for the SDR to becoming a currency. In this vision, the issue of a so-called `substitution account` would be easier to perform, avoiding to lay `the burden` only on IMF. In this context, it would not be too difficult to structure a segment of the monetary and financial market for SDR transactions under a strict regulation.

The utility of such an organised initiative is confirmed by the `invasion` of the so-called crypto-currencies which appear and evolve in a `grey zone` (somehow alike *shadow banking).* The

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[32] M. King, The end of Alchemy, ed. Little, Brown, London, 2016, p.291.

[33] The viability of the Special Drawing rights as an international asset, IGC – International Growth Centre.

[34] M. Obstfeld (Univ. of California, Berkeley/International Growth Centre – London School of Economics), The SDR as an International Reserve Asset: What Future? , March 2011, p.13.

`tolerance` of the monetary and banking authorities toward such `experiments` is, in fact, not encouraging `free enterprise`, but is a form in disguise of the greed for new ways of speculative operations, which is an old virus affecting the real qualities of an economy based on capital accumulation.

Although the main role of SDR would be to contribute to the equilibrium of international liquidity, especially in the periods of troubled economic and financial relations, SDR should confirm one of its original meanings – alleviating the gaps between the levels of development among different groups of countries (mainly industrialised states and underdeveloped countries). It is evident that, beyond economic and financial factors, solving the intricate problem of the huge development gaps vitally depends on *political will* of the most powerful and developed states. Despite some steps in the direction of democratising the institutional infrastructure of the present role, the road to a real democracy has always been bumpy. The first years after the World War II were the most prolific as regards the international institutions and organizations meant to assure a peaceful world, favouring negotiations instead of military conflicts. Certainly IMF, the World Bank and the World Trade Organization are only some pillars of the post-war international order. Unfortunately their progress was frequently impeded by the main political forces acting worldwide. Thus between the end of 1940s to the end of 1980s, there was a bipolar division of the world (USA and USSR). The dissolution of the state socialism system and, finally, of the USSR seemed, for more than a decade, to bring the world to a one polar position.

The beginning of the 21st century has marked a clear advancement to a multi-polar political world and a strong move toward a multipolar global economy. This situation has created an ambivalent political environment: on the one hand, this may be a prerequisite to enhance the level of the democratic approach of the most important world problems to solve. But, on the other hand, there is a dangerous possibility to assist to a multiplying of international conflicts (economic, financial, commercial and even military). A weak point of the present world order is that the UNO has been in a shade of grey for some time. Probably UNO itself needs some functional improvements.

The 2010 IMF reform represented a power shift in favour of the emerging and developing economy Fund's members, but which became effective in 2016, mainly because the US Congress did not ratify the reform in due course. After the above-mentioned reform, China's voting share rose from 3.8 to 6.1%, consequently becoming the third important member, after the US and Japan. However that was more of a `diplomatic` manoeuvre, because the minor decline in the US voting power share – from 16.7 to 16.5 – did not affected the US *de facto* veto right. As it is known, the issues considered of `major importance` – as it is the increasing role of the SDR – could be approved only with a majority of at least 85% of the total voting power. A new role and quality of the SDR depends on the type of international order dominant in the world economy. As long as the major powers of the world are obsessed by reshaping their spheres of influence, the international relations would be poisoned by real or provoked conflicts, generating the so-called `regional wars` which, unfortunately, could degenerate in a world military disaster. In such tensed environment, mined by threats and force demonstrations, a fully developed role for SDR, based on democratic and generous principles, could offer a unique opportunity for solving present world grave problems, paving the way for a better future.

After a complex improvement in the organizing and functioning of the IMF, SDR should, in the near future, become the IMF's currency. To avoid difficult and lengthy procedure, a certain amount of SDR should be at the disposal of IMF executive Board yearly (e.g., SDR 200 billion), deposited in a `substitution account`, in a transparent and well managed way, under a periodical auditing procedure: "Until now, the Fund has relied mainly on quota (capital) increases and borrowing from member countries. But quotas have tended to lag behind global economic growth; the last increase was approved in 2010, but the US Congress agreed to it only in 2015. And loans from member countries, the IMF's main source of new funds (particularly during crises), are not true multilateral instruments."[35] SDR could accomplish the basic functions of money: unit of account (already accomplished), a store of value (partly and weakly accomplished so far) and – most important for its evolution – means of exchange. In our view, this proposal should not be considered a position in

[35] *J. A. Ocampo (Columbia University), Is it time for a `true global currency`? World Economic Forum / Project Syndicate, April 2019.*

favour of establishing `a unique world currency`. National and regional currencies should preserve their role and their natural evolution, according to every nation's will.

The SDR as a currency should valorise `the principle of communicating vessels`, for smoothing the functioning of the global monetary and financial system, aiding to reduce the gaps in development of different groups of countries, avoiding lack of international liquidity, financing productive, socially useful real investments and discouraging speculative and disruptive operations (more or less `sophisticated`). Undoubtedly, it is useful to analyse the composition of the foreign exchange reserve. It is worth mentioning that the percentage of the reserves officially identified increased remarkably, from almost 78.5% in 2016 to about 94% in 2019.

Table 1

World currency composition (in %)

	2016	**2019 (Q I)**
USD	65.36	61.82
Euro	19.14	20.82
CHY	1.04	1.95
JPY	3.96	5.25
GBP	4.34	4.54
AUD	1.69	1.67
CAD	1.94	1.92
CHF	0.17	0.5
Other currencies	2.34	2.45
Unallocated reserves	21.35	5.95

Source: Currency composition - Official Statistics (IFS)

At the beginning of 2019, the total `allocated` exchange reserves have represented almost USD 11 trillion. It is interesting to remark that, in the wake of the GFC, central banks allotted to the `markets`, by their `nonstandard` monetary policies about USD 10 trillion. Taking into account that USD represents over 60% of the `official` reserves, it is obvious that, beyond the `exorbitant` privilege, USD is the `messenger` of the American economy, with its strong and weak characteristics during its evolution. Regretfully, after the GFC, the western advanced economies have proved an increased *financial fragility* (see Minsky's terminology). This complex stimulating concept has been researched and developed furthermore: "The current international monetary system is fragile because the dollar standard is rapidly deteriorating. The dual role of the US dollar as the dominant international money *and* national money cannot easily be reconciled because the US monetary authorities face a conflict between pursuing domestic objectives of employment and inflation *and* maintain the international public good of stable money."[36] To avoid this `dilemma`, the authors of the quoted study, taking "inspiration from the principles underlying Keynes's old plan for *bancor* and an international clearing union", have proposed "the creation of a supernational bank money (SBM) within the institutional setting of a clearing union."

As already underlined, the revival of an international interest for increasing the role of the SDR was stimulated by the inclusion of the Chinese Yuan (renminbi) as a component for defining SDR value (in 2015/16). However, so far China's efforts has had modest effects, mainly due to the position of the USA which still have a de facto veto in the IMF voting procedure. Therefore a "top – down reform of the international monetary system appears infeasible. … Any reform will have to be *de facto* and bottom –up, the initiative of a state or group of states, and promulgated by the market

[36] *P. Alessandrini, M. Fratianni , Dominant currencies, Special Drawing Rights and Supernational Bank Money", in World Economics, Vol. 10, No. 4, Oct. – Dec., 2009 (updated in January 2019).*

process."[37] As the IMF documents underline, nowadays "IMF members regularly need to buy SDRs to discharge their obligations to the IMF or to replenish their SDR holdings. They may also wish sell SDRs in order to adjust the composition of their reserves."[38] Despite these needs, "the major limitation on the use of SDRs is the division between the IMF's general resources and SDR accounts, which limits the use of SDR to payments among central banks."[39] Therefore the normal evolution of the SDR is mainly blocked by the US restrictive position, despite an obvious necessity for increasing the SDR`s role. The rather shocking project of Facebook to `create` *Libra* as a virtual/digital currency indirectly conforms the utility of developing the SDR as an effective international currency, avoiding risky `private` initiatives, which usually reflect narrow speculative interests (one should pay attention to the tribulations of the *bitcoin* experiment).

As aforementioned, the threat of a serious recession could favour an increase of the SDR's role. Since mid-2019, there have been more signals of a worsening international economic climate. Recently (September 2019), Ron Paul – founder of the *Institute for Peace and Prosperity* - declared (at CNBC) that bonds of about 17 billion USD are already in the zone of negative interests which would be a clear sign of a new huge financial bubble: "We are in the biggest bond bubble in history and it's going to burst." Under these circumstances, it is quite possible the SDR to be seen as a mitigating factor so that their role and functions to be substantially increased. Certainly it would be wiser to act according to a well-balanced plan beneficial for all the parties involved. Unfortunately the present world is marked by numerous contradictions and conflicts which make solutions of the *force majeure* type more probable.

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IDENTIFICATION OF POSSIBLE SOLUTIONS FOR REDUCING THE VULNERABILITY OF THE REPUBLIC OF MOLDOVA BANKING SYSTEM THROUGH THE BASEL III

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Abstract:

The article discusses the standards of banking regulation Basel III, the process of their introduction into the practice of the Republic of Moldova banking supervision. The author compares the current mandatory standards of the Republic of Moldova banks and the indicators recommended by the Basel Committee on Banking Supervision, analyzes the possible consequences of the use of Basel III for the Republic of Moldova banking system in terms of reducing systemic risks. The features of the application of these rules in the EU are considered. Possible changes are projected as a result of the implementation of Basel III in the banking system and national economy.

Keywords: *banking regulation, Basel III, commercial banks, backbone banks; financial risks, vulnerability.*

JEL classification: *G21, G28, G38*

Introduction

The banking system is an essential element of both the national and international economies, since it performs the most important functions of accumulating and redistributing capital, simplifying, streamlining and accelerating payments, thus ensuring uninterrupted and continuous production of goods and services, stimulating investment activity, demand and consumption. The stability of the banking system is necessary to ensure the effective development of other sectors of the economy and economic growth in general. In this regard, it is important to prevent the occurrence and development of crisis phenomena within the banking system in order to avoid their spread to other sectors of the economy, which, in turn, necessitates the control and optimization of the risks to which it is exposed.

The international nature of banking creates the possibility of its removal to a certain extent from the control of national banking supervisory authorities. In this regard, there was an objective need to coordinate the efforts of the supervisory authorities of various states to regulate banking activities and create an international banking supervision system.

The main task of the Basel Committee is the introduction of common standards in banking regulation. To this end, the Committee develops directives and recommendations for the regulatory authorities of Member States.

Basel III is a response to the global financial crisis of 2007–2009. Analyzing its causes, experts as one of the main reasons identified failures in the prudential regulation of financial intermediaries. The Basel Committee on Banking Supervision (BCBS) has agreed on reforms to "strengthen global rules on capital and liquidity in order to ensure greater banking sector sustainability."

Description of the Problem

The new standards are a reform of capital and liquidity regulation at the international level, aimed at strengthening the banking sector, improving its ability to withstand shocks arising from financial and economic stresses regardless of their source, as well as strengthening banking regulation and supervision.

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While Basel III is in the process of being accepted for execution by national regulatory authorities, the focus moves to the area of implementation - determining the degree of influence on business processes and planning the transition to new standards. Already, there are signs that the implementation of the generally accepted system will have its own characteristics depending on jurisdictions. Although the transition period looks quite long, financial institutions are not recommended to focus only on the deadline for the completion of the implementation scheduled for 2019 - they should be ready to demonstrate stability of capital and liquidity in advance and meet deadlines in the course of implementation.

Thus, it is important to understand how implementation at Basel III will reduce the vulnerability of the banking sector in the Republic of Moldova.

Methodology and Data

The purpose of this work is to study the standards of banking regulation Basel III, the study of the process of their introduction into the Republic of Moldova practice of banking supervision, as well as the forecast and evaluation of the results of their use for the Republic of Moldova banking system. The methodological basis of the article was the legislation and regulations of the National Bank of Moldova. The basic provisions on the principles of modern banking regulation were also used. Scientific articles on the application of Basel standards in Moldovan and foreign banking practice were studied, and the results of economic research conducted by the National Bank of Moldova were used. The following research methods were used: analytical, historical-legal, comparative-legal, predictive.

Results

Banking activities are always associated with a number of risks, many of which are devoted to the study of scientific papers. There are various understandings and classifications of banking risks. From a mathematical point of view, risk is the likelihood of an unfavorable outcome. In economic terms, risk is the level of uncertainty in predicting a result, an element of uncertainty that may affect the activity of a business entity or the conduct of an economic operation; the opportunity to suffer from any form of loss or damage, the likelihood of incurring losses from commercial activities (Lavrushin, 2009, p. 353].

In recent years, an increasing interest in risk management systems in various sectors of the economy has been observed all over the world. It is noteworthy that, in accordance with the results of a study conducted by an international company Ernst & Young, financial risks are recognized as the most significant (Cooper, 2008, p. 22).

Risk management, as a rule, begins with a classification, on the basis of which measures for their optimization are subsequently developed. From this point of view, the most rational is the classification of risks to which institutional financial intermediaries are subject, including commercial banks, proposed by Coopers & Lybrand in the “Generally accepted risk management principles” study published in 1996. In accordance with this classification, the following risks are highlighted: Market risk (stock risk; currency risk; interest rate risk), Credit risk, Operational risk, Liquidity risk, Business event risk (Schinasi, 2005, p. 7). In our days, we can state the importance of systemic risk in the banking sector.

Modern researchers note that the banking sector has the largest share in the financial system of the Republic of Moldova. This problem is relevant not only for our country, but also for the world community as a whole: the Basel Committee on Banking Supervision (BKBN), established in 1975, has been developing the best tools for assessing and controlling risks in the banking sector for a long time. It includes representatives of the largest banks and financial supervisors and regulators of the leading countries of the world. During its existence, BKBN has developed a significant number of recommendations on banking regulation. The standards of banking regulation developed by him in accordance with the adopted agreements can be divided into the following groups:

1) the development and introduction of uniform standards, the creation of an international system of banking regulation;

2) development and introduction of criteria and requirements for national banking supervision and regulatory authorities, development of recommendations on the organization of credit and operational risk management systems;

3) the introduction of more stringent requirements for banking capital to ensure the stability of the banking sector and limit the redistribution of risk between different levels of national economies.

The international agreement on capital measurement and capital standards, known as Basel I capital agreement, signed in 1988, contributed to improving the efficiency of financial regulators by developing and introducing new methods for assessing the risk in the banking sector based on capital adequacy requirements. The establishment of mandatory standards for capital adequacy later became the basis of all banking regulation, so the first Basel agreement can be considered the most successful innovation in the practice of banking regulation.

In the course of the practical application of the first recommendations of the BKBN, new areas have been identified that require increased monitoring by the banking supervisory authorities. There was a need to improve the control and risk management systems (credit, operational and market) at both the state and intrabank levels. As a result, the Basel II agreement was adopted in 2004, supplemented in 2006 and 2009 (Basel II.5), which spelled out in detail the requirements for internal control and risk management systems in commercial banks. This document, which includes the basic algorithms for calculating market, credit and operational risks, according to its creators, was supposed to encourage banks to develop their own internal risk management systems. However, he also had “bottlenecks” that did not allow for the full implementation of the innovations envisaged in countries with different levels of economic development. Hidden defects of the agreement that do not take into account all the features of working with derivative financial instruments, off-balance sheet activity and the active use of tools such as securitization indirectly contributed to the development of the mortgage crisis, which later spread far beyond the banking sector.

The purpose of the third agreement (Basel III) was to eliminate the shortcomings of banking regulation, which were revealed by the crisis of 2008–2010. In the new requirements, the emphasis is placed on large, systemically important banks, as their national economies depend on their stability and risk tolerance and the global financial system.

According to the decision of the Basel Committee on Banking Supervision, the proposals for Basel III have two main objectives:

- strengthen international capital and liquidity standards in order to create a more sustainable banking sector;
- improve the ability of the banking sector to cope with the effects of financial and economic crises, thereby reducing the risk of the spread of these problems from the financial to the real economy (Turner, 2015, p.121).

To eliminate the identified deficiencies in banking regulation, the Basel Committee adopted a number of reforms, with the help of which it is planned to enhance the effectiveness of risk management systems and corporate governance in general, as well as to increase the transparency of information disclosed by the bank.

The Basel III standards set new capital requirements for commercial banks and its structure: banks' own funds are divided into two levels. It is assumed that the main burden falls on the capital of the first level, which includes the base and additional capital. The value of the first of them is strictly regulated, its minimum value is 4.5%, it includes the following components:

1) ordinary shares;
2) retained earnings;
3) share premium for ordinary shares.

Also in the calculation of the base capital in certain cases stipulated by the standards of Basel III, adjustments may be made for deferred tax payments, investments in own shares and other assets similar in economic content.

The additional capital of the first level consists of assets combined by a single criterion for converting and writing off for losses; there is no separate minimum value criterion for this indicator, but the standard of sufficiency for the first level capital is 6%.

Basel III provides for the creation of a countercyclical capital buffer and a capital conservation buffer. The first of them is designed to curb credit activity during periods of economic recovery and stimulate it during a recession, the second - to maintain capital at the required level of distribution of profit spending to cover losses during a recession. Modern researchers have noted that the use

of increased capital requirements provided for by new standards has given its results: in the absence of the negative effect on the economy expected by some experts, the banking sector of the euro area (with the exception of Banca Monte dei Paschi di Siena), which now has more high capital stock and more able to absorb economic and financial shocks than it was in 2014 (Turner, 2015, p. 122).

Basel III provides for the use of financial leverage as a regulatory indicator. In this role, there is a leverage - the ratio of basic capital (tier one capital) to assets Bank (assets on the balance sheet, investments in derivative financial instruments, securities financing operations and off-balance sheet accounts). The minimum value of this indicator is set at 3%. The use of leverage allows us to estimate the level of debt burden on capital. From January 1, 2018, this indicator is planned to be introduced for all countries of the Better Community Business Network (BCBN) participants. The standard is intended to curb excessive imbalance between capital and assets and provides an additional level of protection against risk measurement errors, taking into account the overall risk (Lavrushin, 2009, p. 224).

The Basel III standards also include a change in the liquidity requirements of commercial banks. Two indicators are introduced: the short-term liquidity ratio and the long-term net stable funding ratio (the first indicator reflects the bank's ability to continue its operations for 30 days during the crisis period, the second - the bank's ability to function during the year under stressful conditions of restricting capital market access). Modern researchers have noted that there are some contradictions in the mechanism of application of these indicators, which raise doubts about the effectiveness of their application. For example, it is questioned that the instruments included in the calculation of the short-term liquidity indicator have their highly liquid characteristics during the crisis period, when they have to play the role of a certain "safety island" that allows them to hold out in a stressful situation, which complicates the task of evaluating the effectiveness of new tools minimizing the systemic risks of the banking sector and increasing its stability (Turner, 2015, p. 124).

The implementation of the Basel III proposals is divided into stages until 2019, when the completion of the process is expected. The timing of the introduction of new banking regulation standards in a given country depends on the position of the national regulator. The timing of implementation and the basic requirements of the new standards are presented in Table 1.

Table 1

Minimum requirements for the composition of capital and the period of their introduction (in% by January 1 of the relevant year)

Indicators	2015	2016	2017	2018	2019
Equity share	4.5	4.5	4.5	4.5	4.5
Backup buffer	0.625	1.25	1.875	2.5	2.5
Share capital + buffer	4.5	5.125	5.75	6.375	7
Capital adequacy ratio	8.0	8.0	8.0	8.0	8.0
Capital Adequacy + Buffer	8.0	8.625	9.25	9.875	10.5

Source: BIS, 2010.

Under normal business conditions, in a situation where financial institutions are able to assess and predict their risks, a much lower level of capital is required for the stable operation of banks. But in a situation where the risks are rated incorrectly, the recommended "Basel III" "airbag" will be clearly not enough to maintain stability and liquidity. Suppose that if a retail bank did not even work with mortgage loans that collapsed the financial system in 2007–2009, then it could easily face a sharp increase in the percentage of loan default (BIS, 2010).

The establishment of higher requirements for commercial banks in general, and for systemically important banks in particular, leads to the improvement of the banking system and cleansing it of unscrupulous participants, which ultimately will increase confidence in the banking system, including small and medium-sized banks. Increasing confidence in smaller banks will allow the latter to increase liabilities by attracting deposits and expand lending opportunities, which will lead to an increase in financing of real investment projects.

Conclusions

Thus, the issue of fulfilling the requirements of Basel III takes on special significance in the realities of the modern Republic of Moldova economy, in which, against the background of international economic sanctions and the instability of the foreign policy situation, many banks face the impossibility of fulfilling the requirements of the capital adequacy ratio to finance potential defaults. Innovations are aimed at increasing the capital intended for financing outstanding arrears (in other words, first-level capital, which was raised in addition to its value, also due to the formation of a conservation buffer), against the background that the requirements for second-level capital, on the contrary, have decreased.

The purpose of applying the Basel III standards in Republic of Moldova is to bring the banking regulation and supervision of the Republic of Moldova in line with international standards in this area. In addition to strengthening banks' resilience to stressful situations, this will allow the Republic of Moldova banks to increase their credit ratings and be full participants in international financial relations. The development of the banking sector of Republic of Moldova is the key to successful investment and trade operations at the international level.

Future Directions

The new ideology suggests that during the period of the financial and economic crisis or in anticipation of increasing uncertainty in the economy, it is necessary to abandon the ideology of bank capital management and the creation of financial reserves to maintain liquidity and financial stability of credit organizations. These measures will not be able to protect the bank from default and bankruptcy. In times of crisis, prudential supervision also loses effectiveness, since violations of mandatory standards are often not associated with a low level of management or the criminal behavior of the management of a credit institution.

Tighter regulatory measures will reduce risks for the banking system and make it more resilient to external influences. Thus, the National Bank of Moldova, on the basis of agent-based modeling, investigated the impact of increased banking supervision on the structure of the banking system. It was found that in the long run it is more beneficial for the economy than maintaining relatively low regulatory requirements. Conscientious banks benefit from the implementation of tighter regulation policies, healthy competition develops, the financial stability of the banking system increases, lending to investment projects develops, which contributes to economic growth.

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THE ASSESSMENT OF THE PUBLIC DEBT SUSTAINABILITY

PhD, CAMELIA MILEA[41]

***Abstract**:*

The subject of the article[42] *is justified by the international concerns following the rapid growth of the public debt, as an effect of the global economic and financial crisis. Based on the main concepts and definitions in the economic literature on debt sustainability, the author adopts her own opinion on the definition of debt sustainability. In the paper, there are analysed the factors influencing public debt and the risk of default, there are identified some limitations of the analysis of the public debt sustainability, there are presented the factors influencing public debt sustainability and the risk factors in ensuring the sustainability of the debt. Finally, some methods of ensuring debt sustainability are highlighted.*

One of the most important conclusions is that there is no rule for determining a "safe" level of the public debt. Each country must define its maximum level of public debt based on its own macroeconomic and financial experience and of other countries, but taking into account its own characteristics.

Keywords: *public debt, sustainability, negative effects, factors of influence, risks*

JEL Classification: *F34, G01, H63*

Introduction

Since 2008, the effects of the global economic and financial crisis have begun to influence the world economy. Among these effects there is the rapid increase of public debt in advanced economies, mainly generated by an over-optimistic estimation of the fiscal situation before the crisis, by the reduction of public revenues and the increase of social expenses during the crisis, by the costs of restructuring the banking system, by the counter-cyclical fiscal policies.

In this context, the evolution of public debt and budget deficits has become a very important issue of economic policy in many countries. As a result, the sustainability of public debt has become one of the widely debated topics, in the context of the need to coordinate fiscal policies in the Eurozone countries, to raise awareness of the threats that exaggerated spending may have on future generations and the future challenges to public finances due to population aging.

Although there are several definitions of debt sustainability, it cannot be said that this concept is clear at present. In the economic literature, there are several methods for defining and evaluating debt sustainability, different in terms of time horizon and the variables chosen. Thus, debt sustainability can be viewed as a dynamic concept, on the short, medium and long term; debt and deficits can be measured in gross or net terms, including or not the liabilities of social security systems or other items.

The International Monetary Fund (IMF) defines *debt* as being the totality of the financial claims that requires the payment of interest and principal by the debtor to its creditor at a later date. *The debt financing profile* represents the characteristics of a country's debt, including currency composition, maturity of debt and the basis of creditors (composition, size and residence).

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Public debt represents the debt of the government (or of other entities, with the guarantee of the state) toward third parties, and it can be external public debt (toward foreign legal entities and physical persons, foreign companies and banks) and domestic public debt (loans in national currency or in foreign currency to national creditors) through the purchase of bonds issued by the government to cover the needs of the respective economy.

Public Debt Assessment

Debt sustainability is ensured if the government of a country does not resort to renegotiating, defaulting or restructuring its debt and / or will not make major adjustments to its policy. The debt is not sustainable when the debtor increases its debt faster than the growth of his ability to pay debt service, especially in the long term.

Long-term sustainability is a dynamic concept, which depends not only on the stock of debt and its associated service, but also on the growth rate of new loans, on the evolution of the fiscal situation and on the ability to repay the debt.

The destination of public debt, for consumption or for investment, is of utmost importance for the sustainability of the growth of *public debt* and for the transfer of fiscal burden to future generations.

Dinga E. (2018) defines *sustainability* as being a feature of a process (phenomenon, system) to maintain itself on the desirable trajectory, in a predetermined or acceptable range, for an indefinite period of time and on a global area of accessibility[43].

Sustainability has several characteristics that define it. Thus, sustainability is not judged in terms of yield, it does not matter the cost of ensuring sustainability; sustainability implies the existence of influences from outside the process / system; sustainability implies the element of proficiency[44]; sustainability means solving the structural vulnerabilities that have arisen in the evolution of the process / system in question. (Dinga, 2018)

After analysing the economic literature, the author adopts her ***own opinion on the definition of debt sustainability***. Thus, *sustainability* is a property of *debt*, which implies that the evolution of the debt ensures the payment of the debt service in the medium, and possibly long term, without the need for significant changes in the economic policies, without generating shocks, tensions in the internal market, without causing major fluctuations of the macroeconomic variables of the national economy. Sustainability allows fluctuations of debt, being important to achieve the expected, positive, effect on the medium and long term.

From the definitions of debt sustainability in the literature, it emerges a *criterion for debt sustainability*, namely the borrowed capital must be used for investments having an yield at least equal to the interest rate paid on the contracted debt, or for economic reforms.

The purpose of pursuing debt sustainability is to ensure a sustainable economic development, sinuous, without constraints, shocks or tensions. In other words, *the purpose of ensuring debt sustainability* is to avoid the negative effects of debt default (the impossibility of the government to perform its duties; the significant increase in taxes, and even the implementation of expropriation measures; high inflation; the depreciation of the national currency; banking crises; the loss of private savings; the overloading of some segments of society; the undermining of public confidence in the government; domestic politic instability; the worsening of country's rating and of the political prestige at the international level).

Indebtedness indicators show liquidity and solvency issues. According to the IMF, the *liquidity* of a company shows the sufficiency of its liquid assets and of the available financing to cover or to roll up its outstanding liabilities.

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[43] Not only a stationary process can be sustainable, but also one that increases or decreases.
[44] Proficiency is the quality of generating the expected (positive) effect.

Solvency shows that the current debt stock is fully covered by the present discounted value of all expected future primary balances[45]. In other words, it can be said that the government meets the intertemporal budgetary constraint, or that the "no-Ponzi" condition is satisfied.

Generally, in order to describe the *solvency*, there are used in analysis indices of debt stock compared to the repayment capacity[46], and in order to describe *liquidity problems*, there are used debt service rates and indicators of gross financing needs.

Liquidity problems are sometimes difficult to distinguish from insolvency problems, as liquidity can lead to insolvency due to tensions in the exchange rate or to rise in interest rates.

In emerging and advanced countries, the problem of public indebtedness is rather related to the temporary lack of liquidity, due to insufficient revenue receipts and / or to urgent payments to creditors, while in low-income countries with high rates of public debt (% of GDP), the main problem seems to be solvency.

From a financial point of view, there are a number of indebtedness indicators that can be used to measure, in different ways, the cost of debt service and the ability of the country to ensure this service, and also the sustainability of debt can be evaluated (see table no. 1). In general, these indicators measure liquidity and solvency.

Table no. 1.

Indicators for Evaluating the Debt and the Debt Sustainability

Indicators	Calculation method	Explanations	Critical values of the indicators for debt sustainability framework (for HIPC[47] countries)		
For foreign debt			Strong	Medium	Weak
Liquidity indicator	1. The ratio of external debt service (total external debt service / exports of goods and services)	1. It assesses the share of export receipts necessary to pay for external debt service	25%	20%	15%
	2. The ratio of the budgetary service (the total service of the external debt / the budget revenues generated domestically)	2. It measures the government's ability to finance the external debt service from domestic sources	35%	30%	25%
Solvency indicator	3. The present value of the external debt / exports of goods and services	3. It measures the present cost of external debt from the perspective of the ability to pay from exports	200%	150%	100%
	4. The present[48] value of the external debt / budgetary revenues generated internally	4. It evaluates the present cost of external debt compared to the government's ability	300%	250%	200%

[45] *The primary balance represents total interest-free income minus total interest-free expenses and net acquisition of non-financial assets. Also, the primary balance is equal to the net loans received / granted plus the net expenses with the interests minus the net income from the interests.*

[46] *If they have a stable or declining value, then the solvency condition is met.*

[47] *Heavily Indebted Poor Countries*

[48] *The present value of the payments for the external debt service is the discounted value of the payments planned according to the redemption plan. The rates determined on the basis of the present value have certain limits, the most important of which is that they are highly dependent on the discount rate chosen. Thus, a poorly chosen discount rate can determine results that lead to a wrong evaluation*.

	5. The present value of the external debt / GDP	to finance foreign debt service from domestic sources 5. It evaluates the present cost of external debt compared to the national income.	50%	40%	30%
For internal/domestic debt					
Liquidity indicator	6. The total domestic debt service / domestic budgetary revenues	6. It measures the government's ability to finance domestic debt service from domestic sources			
Solvency indicator	7. The present value of the internal debt / budgetary revenues generated internally	7. It evaluates the present cost of domestic debt compared to the government's ability to finance domestic debt service from internal sources			
	8. The stock of nominal domestic debt /GDP	8. It measures the stock of domestic debt compared to the national income	Significantly more than 15-20%		
For total debt					
Liquidity indicator	9. The total debt service / domestic budgetary revenues	9. It measures the government's ability to finance domestic and foreign debt service from domestic sources			
Solvency indicator	10. The present value of the total debt / budgetary revenues generated internally	10. It assesses the present cost of internal and external debt compared to the government's ability to pay from internal sources			

Source : IMF

The factors influencing the public debt and the risk of default on the debt are:

- public expenditure on goods and services,

- tax revenues,

- the interest rate paid for the debt,

- the exchange rate of the national currency,

- the share of debt in foreign currency. The higher it is, the more the risk of default increases in case of depreciation of the national currency,

- the dynamics of public debt compared to the dynamics of GDP. The higher raise of the public debt compared to GDP has effects in the direction of increasing the risk of default.

- the dynamics of debt. If the debt increases rapidly, the risk of default is higher,

- the maturity of the debt. In the case of short-term debt, problems can arise for debt refinancing, but also due to fast disinvestment in the event of a shock, and thus increases the risk of default,

- the existence of liquid financial assets,

- the share of non-resident creditors in the total creditors. The higher their share, the greater the risk that they will sell their government bonds quickly in the event of a crisis,

- the presence of contingent liabilities, especially in the financial-banking system,

- the degree of openness and transparency of the government regarding public debt management. The availability of information on a country's public debt influences market expectations, and implicitly the behaviour of economic agents,

- market expectations, and implicitly the behaviour of economic agents, influence indirectly the level of public debt through the effect on the real interest rate,

- the financial standing and the reliability of the country (past events of debt default, high levels of inflation, banking crises, national currency stability),

- the political stability and the ability of politicians to make the decisions necessary to achieve fiscal consolidation, the predictability of a country's economic policy,

- the potential evolution of budget revenues, the availability of additional sources of budget revenues, the potential evolution of the budget revenues getting in rate,

- the level of development and liquidity of the financial market,

- the external demand for the sovereign debt of the respective country and for other financial instruments and the international role of its national currency. This factor expresses the degree of readiness of the financial markets to finance high levels of public debt of the respective economy,

- the situation on the international financial market, the changes in global liquidity, in investors' sentiment, their reaction to shocks.

As a result, it can be said that there is no rule for determining a "safe" level of public debt. Each country must define its maximum level of public debt based on its own macroeconomic and financial experience and of other countries, but taking into account its own characteristics. Given that the risk of default depends on many factors and sometimes on unforeseen circumstances (shocks, etc.), the maximum level of indebtedness must be determined at a low level, maintaining an adequate margin of safety.

The Assessment of the Public Debt Sustainability

The ratio between gross public debt and GDP represents a significant indicator of the economic and financial soundness of a country, and the decrease of this ratio can be determined by a small primary deficit and by an increase of the GDP higher than of the interest rate on the government securities., more precisely, it is necessary to aim always that the receipts exceed the expenses.

The ratio of gross or net public debt to GDP is an indicator through which debt burden is assessed qualitatively.

Also, the *ratio between public debt and GDP, analysed in dynamics, is one of the most commonly used indicators for assessing the sustainability of public debt.*

However, this indicator has some "shortcomings". Previous experience shows that the ratio of debt to GDP is not the only factor that defines the level of fiscal and financial risk of the country (public debt crises can occur at different levels of this indicator). Secondly, this indicator is strongly pro-cyclical, thus decreasing in the years of boom and increasing during recession or during slowing down of economic growth. The procyclical character is determined by the way the indicator is built. Thus, during periods of boom, the fiscal balance improves, bringing about the decrease or the contraction of the increase of the public debt (the numerator). On the other hand, nominal GDP is growing faster (denominator). In addition, in the countries that borrow in foreign currency, the public debt expressed in national currency (the numerator) decreases as a result of the appreciation of the national currency. In times of crisis and recession, the trends presented above evolve in the opposite direction. In addition, some contingent public liabilities may arise, leading to an increase in nominal public debt (especially related to ensuring the stability of the financial-banking system).

Therefore, the ability of the public debt-to-GDP ratio to predict the risk of a debt crisis and to assess the financial and macroeconomic stability of an economy, and the sustainability of public debt is limited. (Dabrowski, 2014)

At the same time, the economic literature and our approaches identify *other limitations of the analysis of the public debt sustainability.*

One of the *limitations* refers to the fact that it is extremely difficult to assign explicit probabilities to the perspectives for debt crises outburst, especially in the context of a limited set of data or due to the impossibility to compare data between national economies, or between different economic sectors. Also, the conjectural or structural changes of the analysed economies make it difficult to analyse the sustainability of public debt.

Another limitation may be considered the preference of the analyses of the public debt sustainability for the indebtedness thresholds and less for the dynamics of the debt. It is estimated that many of the advanced economies (e.g. GIIPS countries) can ensure debt sustainability (calculated as % of GDP) also above the threshold of 100%, especially if there is a debt reduction plan and some reduction of the ratio between public debt and GDP occurs in time. This is less true for some emerging economies, which, although may have debt rates in GDP below the 60% threshold, they may be considered as unable to ensure the sustainability of the public debt and therefore they may pay higher interest rates.

According to the IMF (2013), even when the rates of public debt in GDP are low compared to the reference levels proposed by the profile institutions, in analysing the sustainability of the public debt, a series of vulnerabilities generated by the ***factors influencing the public debt sustainability*** must be taken into account:

- a volatile economic growth,

- designing fiscal adjustments in the near future,

- high requirements for external financing,

- large spreads on interest rates,

- the structure of the investor base (a high share of public debt held by non-residents),

- the currency structure of the debt (an important part of the debt in foreign currency),

- debt structure from the point of view of maturities (rapid growth of short-term public debt).

The factors influencing the sustainability of public debt determine the ***risk factors in ensuring the sustainability of the debt***. They are brought about, first of all, by the market perception of the debtor state, but also by the debt structure from the point of view of maturity, which is measured by the debt payment profile and by the weight of the short-term debt. Also, it is important the currency structure of the debt, the degree of diversification of the investor base, as well as the availability of liquid assets and the creditors' base, especially the share of non-resident creditors. In addition, the assumptions based on which the forecasts for the macroeconomic variables are made must be realistic. Gross financing needs must also be assessed.

The lower is the share of short-term public debt service in the total public debt service and the more diversified is the investor base, the more sustainable is the debt. A lower share of short-term public debt means a smaller probability of liquidity crisis and lower costs with interest. The diversification of the investment base refers both to the types of investors and to their geographical distribution, and it shows the long-term confidence in the economic development of the respective country.

When assessing the debt sustainability, it must also be taken into account the specific risks of each country, and a wide set of tax liabilities should be monitored. The fiscal risks due to the imbalances of the private sector and to the contagion between countries must be assessed. Also, the economic and fiscal behaviour in response to shocks must be taken into account.

The debt sustainability assessment has also qualitative aspects. Thus, the sustainability of the debt depends also on the effects / consequences of the debt in the economy: efficiency, destinations (economic activities - consumption or production -, sectors of activity, development regions), on the

contribution to the economic development by financing some objectives / projects of national and / or regional interest, to remove regional and social discrepancies.

The Analysis of the Dynamics of Public Debt

A starting point for measuring the dynamics of public debt is the budget constraint, according to which the current expenses for goods and services plus the debt service must be equal to the current income from taxes plus the newly contracted debt. Also, *the budget constraint is the starting point in the formal discussion on the requirements for ensuring debt sustainability*. Thus, the change in the public debt (D), between two consecutive periods (years) t and t-1, is given by the following equality:

$D_t - D_{t-1} = i_t D_{t-1} + S_t + a_t D_{t-1} - \Delta B_t$, where, (1)

i - is the average nominal interest rate related to public debt, and it can be estimated as follows,

$i_t = Db_t / D_{t-1}$, where

Db_t is the interest actually paid for the public debt;

D_t is the public debt contracted during the period t.

S - represents the primary deficit (without the interest paid);

a - is the effect of the revaluation on the existing debt (in Romania, it is entirely due to the depreciation of the effective exchange rate of the leu), and is equal to

$\left(\frac{D_t}{D_{t-1}}\right)\left[1-\left(\frac{CS_{t-1}}{CS_t}\right)\right]$, where CS is the exchange rate of the currency of the external debt at the end of the year;

ΔB - represents the direct financing of the budget from the Central Bank. This is not considered by the Ministry of Public Finance as an additional debt, and it cannot exceed a certain limit established by law.

An important determinant that appears in equation (1) is the primary fiscal deficit. A continuous increase of the primary fiscal surplus brings about the improvement of debt sustainability by: reducing the real interest rate (through the remission of the eviction effect); the income growth at a higher rate (by increasing the efficiency of resource allocation and reducing the interest rate); the growth of the demand for money (as a result of reducing inflationary expectations) (Garcia, 1998).

Therefore, *the structure of fiscal adjustments can be a critical variable for achieving debt sustainability. To this purpose, it is necessary to draw a strategy for public spending.*

If we divide equation (1) to nominal GDP (GDP_t) and perform some algebraic operations, we obtain the following relation:

$d_t - d_{t-1} = (i_t + a_t - g_t)\left[\frac{d_{t-1}}{1+g_t}\right] + s_t - b_t$, where (2)

d_t şi d_{t-1} – are the public debt shares in GDP, in two consecutive years;

s - is the primary public sector deficit (budget deficit) as a share of GDP;

g - represents the annual change rate of nominal GDP between the two consecutive years taken into account;

b_t - is $\Delta B_t / PIB_t$

From equation (2), rearranging the terms, it results:

$d_t = (1+i_t + a_t)\left[\frac{d_{t-1}}{1+g_t}\right] + s_t - b_t$, (3)

Equation (3) shows that the ***share of debt in GDP increases if the government has a budget deficit and if the nominal interest rate exceeds the nominal GDP growth.***

We can approximate the nominal growth rate (g) as the sum of the change in the GDP deflator (p), and the real growth rate of GDP (q), rewriting equation (3), as follows (Pelinescu, Albu, 2000):

$d_t = (1+i^*_t+p)) \left[\frac{d_{t-1}}{1+p_t+q_t} \right] + s_t - b_t$, where (4)

i^* represents the average real effective interest rate of the public debt, and is equal to the average real interest rate (i-p), plus the revaluation effect, a.

In times of crises, the factors on which depends the evolution of public debt in GDP deteriorate (the budget deficit and the interest rate increase, the GDP growth rate decreases), so that public debt as a share of GDP will increase.

Market expectations, and implicitly the behaviour of economic agents, influence indirectly the level of public debt by raising the real interest rate.

Equation (4) shows that a high real growth rate of GDP compared to the real effective interest rate tends to diminish the debt ratio in GDP, while persistent net primary deficits tend to increase it.

The depreciation of the national currency leads to the increase of the public debt in national currency.

If in equation (4) we divide the public debt at the moment t-1 into the debt in national currency and the debt in foreign currency, and we note with $\mu = \frac{(1+i^*+p)}{(1+q+p)}$, we obtain:

$d_t = \mu d_n + \mu\, r.d_s + s_t - b_t$, where (5)

d_n is the debt in national currency

d_s is the debt in foreign currency

r is the exchange rate of the national currency.

By dividing equation (4) by d_{t-1}, it is obtained the *equation of debt dynamics*:

$d_t/d_{t-1} = \frac{(1+i^*+p)}{(1+q+p)} + (s_t - b_t)/d_{t-1}$ (6)

If we put the condition that the d_t/d_{t-1} ratio tends in dynamics to a low constant value (the condition for sustainability), it is obtained *the condition for the sustainability of the dynamics of public debt.*

After analysing equation (6), we highlight some *methods of ensuring debt sustainability*.

The first way to improve sustainability is to act on the term (s-b). Reducing budget deficits (s) is the most direct and economically sound method. This is, however, strictly limited by the general needs, especially of social order, of the functioning of the government and of the government's advance of institutional reforms. The action on parameter b, i.e. the use of the monetary lever, is dangerous, any increase in its value leading to the inflationary spiral.

If the term (s-b) represents the impact of monetary and budgetary policies, the report $\frac{(1+i^*+p)}{(1+q+p)}$ describes *the behaviour of the real economy*. The key variables that should be acted upon, in this case, are the interest rate (i *), the dynamics of prices (p) and the rate of economic growth (q). In order to stimulate the sustainable growth of the public debt, the interest rate must not increase more than the rate of economic growth.

Conclusions

Long-term debt *sustainability* is a dynamic concept, which depends not only on the debt stock and its associated service, but also on the growth rate of new loans, on the evolution of the fiscal situation, on the debt profile, on the effects of debt in the economy, on the behaviour - response of the economic agents, on the financial flows that a country can absorb effectively, and on their yield, on the volume of foreign exchange reserves, etc.

The sustainability of public debt also depends on the specific risks of each country. The fiscal risks due to the imbalances of the private sector and to the contagion between countries must be assessed. The structure of fiscal adjustments can be a critical variable for achieving debt sustainability. For this purpose, it is necessary to draw up a strategy of public spending.

The author considers that *debt sustainability* implies that debt should evolve in a range that allows to ensure the payment of the debt service in the medium, and desirable long term, without requiring significant changes of the economic policies, without generating shocks, tensions in the domestic market, without leading to major fluctuations of some macroeconomic variables.

Debt is considered to be sustainable when a country can pay its commitments under the contracted debt without having to restructure its debt or without creating arrears.

The *purpose of pursuing debt sustainability* is to ensure a sustainable, sinuous economic development, without constraints, without shocks, without tensions. In other words, *the purpose of ensuring debt sustainability* is to avoid the negative effects of debt default.

From the condition for the sustainability of the public debt dynamics, we find a method of ensuring debt sustainability, i.e. diminishing the budget deficits. From the point of view of the real economy, in order to ensure the sustainable growth of the public debt, the interest rate must not increase more than the rate of economic growth.

There are also *risk elements in ensuring debt sustainability*. They are determined, first of all, by the market perception of the debtor state, but also by the structure of the debt in terms of currency composition and of maturities (it is important the share of the short term debt, and implicitly the weight of the short term public debt service in the total debt service). Also, there are important the availability of liquid assets, the degree of diversification of the creditor base, especially the share of non-resident creditors.

The research shows that there is no rule for determining a "safe" level of public debt for several reasons. Thus, there is no fiscal "safety" standard applicable to all economies. Every country must define its maximum level of public debt based on its own macroeconomic and financial experience and of other countries, but taking into account its own characteristics. In addition, in a globalized economy with irregular business cycles, it is difficult to determine at what stage of the cycle an economy is at a certain moment, which is essential for the assessment of fiscal indicators. The experience shows that the risk of default can substantiate at different levels of public debt, sometimes seemingly very low.

Given that the risk of default depends on many factors and sometimes on unforeseen circumstances (shocks, etc.), and due to the tensed situation on the international market, the "safe" level of public debt is lower at present than 10 years ago, and the maximum level of indebtedness must be determined at a level that will allow the country to cope with unpredictable situations.

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OPPORTUNITIES AND CHALLENGES FACING FRONTIER STOCK MARKETS IN THE EUROPEAN UNION: THE CASE OF BULGARIA AND SLOVAKIA

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Abstract:

The aim of the paper is to present empirical results regarding a tested framework of macroeconomic and institutional factors influening frontier stock markets in the European Union, namely that of Bulgaria and Slovakia. The report analyzes performance indicators on the two stock exchanges relating to market capitalization of listed companies, turnover, volatility indices etc. for the period 2004-2018 with the aim to underline trends, commonalities and divergencies on the Bulgarian frontier stock market as regards Slovakian frontier market being taken as a benchmark (Slovakia being Eurozone member country since 2009 and OECD member state). Based on the comparative empirical analysis of the two stock markets conclusions and recommendations have been drawn regarding problems and challenges facing fronier stock markets in the European Union in the context of the Capital Markets Union initiative.

Keywords: *EU frontier stock markets, market performance indicators, stock market development*

JEL classification: *G19, G23, G28*

Introduction

Stock markets' development is inherently conditional on the existence of well-developed and effectively functioning institutional and business environment, which guarantees preservation of market competition and activation of economic growth through complementarity between stock market and banking finance in boosting SME competitiveness and innovative potential. Various empirical studies (De la Torres et al., 2008) establish that in the course of such improvements stock markets boost the market capitalization and trading turnover of listed companies. However, for frontier markets of Bulgaria and Slovakia structural impediment may turn out to be the small size of the economy, as well as the concentration of ownership and dominance of institutional investors. This could seriously suppress liquidity and stock market activities and may be a barrier in further endeavors for financial integration and the prospective implementation of the EU Capital Markets Union in frontier stock markets of the EU and future EU membership applicant countries.

Description of the Problem

In the course of more than a decade (2004-2018) the capital markets in Central and Eastern Europe have been undergoing significant structural changes of consolidation (i.e. CEESEG) and subsequent disintegrational adaptations following the onset of the global financial and economic crisis under conditions of falling liquidity and rising volatility on the global financial markets. These deconsolidation processes spurred restructuring and prioritizing of activities on stock exchanges aimed at preserving competitive positions. As compared to other stock exchanges in Central and Eastern Europe (CEE) which have been actively involved in consolidation processes, the Bulgarian stock market is facing the challenge to permanently be relegated to remain a frontier (i.e. "peripheral") market due to the persistence of various inherent and structural obstacles at macroeconomic and institutional level. It is noteworthy that Bulgaria remains the EU member country with the lowest level of income per capita and is exhibiting extraordinarily unsatisfactory

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indicators of innovativeness and competitiveness of its economy among EU and CEE member countries 12 years after its membership in the EU due to continuing deterioration in the institutional and business environment at the background of high corruption level and explicit deterioration of democratic freedoms (Freedomhouse, 2018). This presupposes the need for researching into the factors for restoring the effective functioning of the Bulgarian stock market. The comparative empirical analysis includes the Bratislava stock exchange as a benchmark for Bulgaria even though its market capitalization is on a par with that of Bulgaria. The research paper makes parallels with the development of the Slovakian stock market for several reasons: 1) Slovakia is a member country of the Eurozone since 2009; 2) Slovakia is a OECD member country belonging to the group of developed countries with high income per capita (for 2016 in this group belonged 81 countries with Gross National Income per head of the population of USD 12,056 or higher); 3) Slovakia belongs to the group of countries with very high human development index (at 40th place in 2016 from 51 countries). The comparative economic and empirical analysis of stock market performance indicators and of the factors spurring stock market development in Slovakia shed light on the measures needed for improving the effectiveness of the Bulgarian stock market within the context of the Capital Markets Union Action Plan and upon the preparation of Bulgaria on the path for Eurozone accession in the foreseeable future.

Methodology and Data

The aim of the research is to investigate in empirical terms the importance of stock market development for boosting competitiveness and innovativeness of enterprises and to clarify the influence of various macroeconomic and institutional factors of the business environment on market performance of underdeveloped frontier stock markets in the EU.

The research paper has formulated two testable hypotheses:

Hypothesis 1: There exists close relationship between stock market development and economic growth, which in turn boosts competitiveness and innovativeness of enterprises in EU frontier stock markets.

Hypothesis 2: The factors of the business environment (macroeconomic and institutional) can boost or deter the market performance of frontier stock markets in the EU.

Testing for the validity of the formulated hypotheses required the statistical analysis to be performed in two stages:

Stage 1: Examining the relation between stock market ratio and level of innovativeness and competitiveness of the respective country. The empirical analysis included independent factors: 1) average annual turnover ratio on the two stock exchanges (as a measure of liquidity), 2) average annual volatility index on the two stock exchanges; 3) average annual GDP growth rate in Bulgaria and Slovakia, 4) innovativeness variable (average annual R&D expenditure as % of GDP), 5) competitiveness variable (export of high-tech production as % of total industrial production). The empirical analysis employed Augmented Dickey Fuller stationarity test followed by co-integration Engle-Granger test with dependent variable market capitalization/ GDP.

Stage 2: The empirical analysis is based on application of Augmented Dickey Fuller stationarity and then co-integration Engle-Granger test to approbate the influence of business environment factors on the Bulgarian and the Slovakian stock markets and their relation to stock market performance indicators for the period 2004-2018. The dependent variable in each case is the market capitalization/ GDP (second difference) of the respective stock exchange. Independent variables are grouped into macroeconomic and institutional ones. In the group of macroeconomic factor variables are investigated: FDI /GDP; internal credit to non-financial institutions /GDP; average annual real interest rate; average annual inflation rate; gross savings /GDP; gross fixed capital formation /GDP; total value of trade /GDP;) monetary aggregate M3/ GDP. The group of institutional factor variables included: political stability; control over corruption; regulatory quality; democratic accountability and publicity; government and policy effectiveness; the rule of law. Data

for both groups of factor variables were obtained from the Worldbank Database for the period 2004-2018.

Results

1.Performance Indicators of Frontier Stock Markets in the EU: the case of Bulgaria and Slovakia

The Bulgarian and the Slovak stock markets have been classified as “frontier” stock markets by S&P (2019) and FTSE (2018) criteria for capital market classification. Generally, this classification requires in-depth analysis of the market and regulatory environment of the respective stock market; custody and settlement process; the dealing environment, and the opportunities for offering innovative financial instruments (i.e. derivatives etc.).

The market performance of the Bulgarian and the Slovak frontier stock markets has established the following:

Table 1

Market and regulatory environment on frontier stock markets in EU

Indicator	Bulgarian stock market	Slovakian stock market
Country per capita income	Bulgaria belongs to the group of upper-middle income countries according to World Bank (GNI per capita in PPP current international USD 22,300 in 2018, representing about 51 % of the EU average of USD 43,620). It should be noted that in 2007 when the country became EU member state the GNI per capita stood at USD 11,870).	Slovakia belongs to the group of high income countries (GNI per capita USD 33,200 in 2018) while in 2009 when it became a Eurozone member country it was USD 22,900.
Country credit rating	BBB- (S&P 2018)	A+ (S&P, 2015)
Stock market value	Average annualized stock market capitalization for the analyzed period 2004-2018 stood at 5.7 %.	Average annualized stock market capitalization for 2004-2018 at 4.2 %
GDP growth rate	2.7 % (IMF 2017, 2018) spurred by wage growth and EU funds	3.7 % (IMF, 2019) projected to rise to 4 % based on heavy investments in automotive industry, growth in wages and private credit, and faster TFP.
Fiscal stability	24 % annualized mean public debt projected to decline do 17 % in 2021(IMF, 2018)	46.7 % annualized mean public debt (IMF, 2019)
Volatility Note: The 10 years’ average annual volatility of MSCI frontier markets index stood at 15,57%, while for MSCI advanced markets index was 14,65%.	11.13 % volatility index in 2017	15.95 % volatility index in 2017
Attraction of private equity flows	Average portfolio investments 2013-2018 were on negative	FDI flows by 2017 stood at 55 % of GDP

	ground of -0.1 % and annualized FDI flows at 70 % of GDP (IMF, 2018).	
Asset returns	MSCI Bulgaria index for Bulgaria since 2005 stood on negative ground of -9,46 % while according MSCI annualized returns for frontier markets was 7,49 %.	
Political Environment	Moderately free country (Heritage Foundation) 37th rank Current political uncertainties may pose risks to investors in case of slowdown of structural reform process. Another source of uncertainty remains the frequent changes in legislation. Freedomhouse 2018 report: deterioration in democratic scores to 3.39	Moderately free country (Heritage Foundation) 65th rank Freedomhouse 2018 report: sustaining stable democratic score 2.61.
Corruption Lower rankings in terms of corruption control	71st rank with 42 score (Transparency International, 2018), followed by EU applicant countries (Serbia, Montenegro, BIH, North Macedonia etc.) The court system remaining the least trusted public institution (IMF, 2018).	57th rank with 50 score (Transparency International, 2018). Public confidence in the court among the lowest in EU (IMF, 2018).

Source: according to sources cited in table

As self-operating exchanges, the stock exchanges of Bulgaria (BSE) and of Slovakia (Bratislava Stock Exchange, BSSE) follow a similar trend of development during the period 2004-2018. Specifically, the BSSE has one of the lowest levels of market capitalization in CEE (Table 1 in Appendix), in terms of liquidity (Table 2 in Appendix), depth and trading volumes (Table 3 in Appendix) and ranks among the least active exchanges in CEE. After the GFC statistically significant positive correlations have been identified among all pairs of Vishegrad 4 stock markets with the exception of SAX index (Vychytilova, 2018). Slovakia has very low correlation with all emerging markets in Central and Eastern Europe, which provides good opportunities for realization of diversification benefits (Hassan, 2006). Both Bulgarian and the Slovak stock markets have formal stock market regulatory authorities monitoring actively the market development. The existing rules and regulations provide fair and non-discriminatory treatment of minority shareholders. The regulators do not impose selectively any restrictions on foreign ownership, repatriation of capital and income. The relations are based on concluded double taxation treaties.

The reasons for the closer convergence of Slovakia's GNI to Eurozone average of USD 46,499 (about 70 % of Eurozone average) in 2018 are explained with: faster economic (unconditional beta) convergence due to the lower starting base and faster income growth, high investment levels after 2015 surpassing pre-crisis levels (favorable tax regime, cancelled dividend taxation),

proximity to developed European markets; deeper integration in the industrial value chains on EU scale after adoption of the euro (European Commission, 2018). According to Wash et al. (2016) the adoption of the euro in 2009 in Slovak Republic contributed to stabilization of the exchange rate with prevailing trade partners, boost in price transparency, elimination of conversion costs with subsequent activation of inward FDIs under conditions of low interest rates and easy access to credit. However, the Eurozone accession of Slovakia in 2009 coincided with the onset of the GFC, which exposed the country to greater asymmetric shocks within the monetary union (Krzysztof, 2018) and initiation of excessive deficit procedure. Using synthetic control method of analysis OECD (2016) has estimated that if Slovakia had kept the floating exchange rate regime after GFC the country would have sustained higher level of GDP by approximately 2 % thus avoiding a sharp recession.

Regarding Bulgaria in 2019 it has already initiated the formal procedure for participating in ERM II and will be the first country to join the Euro area and the banking union simultaneously setting a precedent for the future EU country members upon successful implementation of ERMII arrangements and EU requirements. There arrangements relate to legislative, institutional and policy improvements identified under EU Cooperation and Verification Mechanism: enhancing supervision of non-banking institutions, insolvency regime inadequacies, heightened macro-prudential measures, reforms in the judiciary system etc. Estimations done by IMF (2019) find that main effect of joining ERM II would be more in the direction of boosting market trust.

Table 2

Custody and settlement process on selected frontier stock markets in EU

Indicator	Bulgarian stock market	Slovakian stock market
Clearing and settlement cycle	T+2 (same for both domestic and foreign investors) on delivery versus payment basis. Central Depository members have global account and their clients have sub-accounts.	T+2. Participants hold securities account at Central Depository directly or indirectly through a custodian. Cash and securities settle on DVP basis.

Source: data from stock exchanges' internet sites

Table 3

Dealing environment on selected frontier stock markets in EU

Frontier stock market	Bulgarian stock market	Slovakian stock market
Low (limited) liquidity level. Stock markets determined by major institutional investors. Note: MSCI frontier markets index turnover ratio amounted to 11,80 % in 2018.	4.2 % turnover ratio in 2017	1.4 % turnover ratio in 2017
Operational complexity	Both stock markets are characterized with implicit and explicit costs which hamper competitive process due to complexity of custodian relationships	
Transparency/visibility of information reporting	Both stock exchanges strictly follow the timely trade reporting process stipulated per EU regulatory base (e.g. MIFID II etc.)	

Source: data from stock exchanges' internet sites

Traditionally, the stock exchanges of Bulgaria (BSE) and Slovakia (BSSE) are also characterized by very low liquidity ratios, which for BBSE by 2017 is only 15% of that of Austria and for BSE 3% of that of Austria (Table 2, Appendix). In 2018 on Bratislava stock exchange were registered 274 issues of securities (215 bond issues and 59 share issues. Bond transactions generated 98.06 %

of the total achieved financial volume in 2018. Regarding the Bulgarian stock exchange in 2018 the turnover on regulated market stood at EUR 280 mln, a decrease by 22 % compared to 2017. The total number of traded issues was 381 in 2018, a decrease by 28 issues.

Table 4

Innovative financial instruments traded on frontier stock markets in EU

Indicator	Bulgarian stock market	Slovakian stock market
Derivatives etc. Note: Classification rules (S&P, FTSE etc.) for frontier markets do not pose explicitly requirement for existence of developed derivative market	Both stock markets are characterized with lack of innovative financial instruments	

Source: data from stock exchanges' internet sites

The main trading instruments on Bratislava stock exchange are bonds and in 2018 transactions in bonds generated over 98 % of total trading volume (i.e. EUR 470 million). Since 2018 the trade in government bonds has been executed on off-exchange market. The stock exchange envisages future modernization of trading systems and more active support of SMEs by initiation of new growth market segment under MIFID II and fintech facilities utilization. For the Bulgarian stock market a new development in 2018 was the listing of 8 ETFs tracking the main indices in Greece, Romania, Poland and Czech Republic, Slovakia, Croatia, Hungary and Switzerland. The Bulgarian stock exchange is participating in the regional trading platform SEE Link and in 2018 Raiffeisenbank International undertook the role of clearing and settlement agent of the transactions in the regional platform by maintaining direct links with the respective central depositories of the member countries' stock exchanges. Another dimension of the development of the stock exchange in Bulgaria in 2018 was the implementation of a measure encouraging SMEs to list on the stock exchange through a voucher scheme with a budget of EUR 1,7 mln under Operational Programme Innovations and Competitiveness. A third innovative element in the development of the Bulgarian stock exchange in 2018 was the start of the niche SME growth segment BEAM giving opportunities to innovative SMEs with growth potential to list their shares on the exchange at more favorable terms in respect of the form and the contents of disclosed information and issuing of stock up to EUR 1 mln without publication of a prospect.

2.Framework factors Influencing Frontier Stock Markets in the EU: Convergences and Divergences

In this part of the paper, empirical results for the two analyzed frontier stock markets in the EU are presented in the following two dimensions:

a) empirical results for the relationship between the activity of the stock exchange (measured by the performance indicators included) and the competitiveness and innovation of the economy of the respective EU country.

b) empirical results of the factors of the business environment (institutional and macroeconomic) and their relation to the realized results on the respective stock exchange.

2.1 Stock market performance and relationship with innovation and competitiveness

The empirical results on the relationship between the performance of the two frontier stock markets in in CEE and the innovation and competitiveness of their economies for the period 2004-2018 indicate the following:

Bulgaria

For the capital market of Bulgaria, Augmented Dicky Fuller (ADF) test confirmed stationarity of the variables included in the model. All independent variables are statistically significant and related to

market capitalization as follows: 1) liquidity and market capitalization (+); 2) volatility of the stock index and market capitalization (-); 3) competitiveness of the economy and market capitalization (+); 4) rise in GDP growth and market capitalization (+); 5) increase in innovation and market capitalization (+). The correlation matrix of the variables included in the model established: 1) average positive correlation between competitiveness and GDP growth. 2) average negative correlation between volatility ratio and market capitalization.

The fact that for the Bulgarian capital market all factor variables co-integrated with the market capitalization confirms the potential of the stock market to assist enterprises in increasing their economic efficiency depending on the availability of favorable economic conditions and economic growth. However, due to the extremely large problem of underdevelopment in this market, the independent variables in the model explained only up to 30% of changes in the market capitalization of listed companies. This proved that there are a number of other factors in the institutional and macroeconomic environment in Bulgaria that are related to the performance of the stock market and its indicators (see Table 4 in Appendix). The Global Innovation Index 2018 ranks Bulgaria last but one before Poland for innovation. In addition, as a “modest innovator” (European Innovation Scoreboard 2018), the country reaches only 48% of the EU's average level of innovation, and the Global Competitiveness Report 2017/2018 sets the country's average position in CEE due to its main problem area related to corruption.

Slovakia

For the Bratislava Stock Exchange ADF test established the stationarity of the variables included, with the model explaining over 50% of changes in market capitalization with changes in factor variables. However, due to the significant underdevelopment of the capital market in Slovakia, there are no statistically significant correlations between market capitalization and independent variables. However, the data show that the increase in innovation of companies in Slovakia co-integrates markedly with the increase in market capitalization. The correlation matrix of the variables included establishes: 1) a positive average correlation (of 0.533) between competitiveness and volatility. 2) positive weak correlation (of 0.3966) between innovation and competitiveness. 3) positive above average correlation (of 0.6592) between innovation and GDP growth.

Similar to Bulgaria, the innovative potential of enterprises in Slovakia depends on favorable economic conditions, as evidenced by the strong correlation between innovation and GDP growth, and confirms that Slovakia's businesses do not yet rely heavily on the capital market for their development. Thus, for 2018, the Global Innovation Index places Slovakia in the middle position (after Austria, the Czech Republic and Hungary) in CEE, and the European Innovation Scoreboard also places it as a "moderate innovator" whose innovations reach 68% of the EU average, and corruption was identified as a major problematic factor in Slovakia (Global Competitiveness Report 2017/2018). Despite this, the gross exports of Slovakia as a share of GDP are among the highest in EU and this is explained by strong links to EU supply chains in machine and transport manufacturing sector (IMF, 2018). Attracted investments in the construction of new auto factory will also boost exports at the background of rising labor productivity by about 12 % (IMF, 2019).

According to the Global Innovation Index 2018, Austria (the country with the highest per capita income in 21st position among 126 analyzed countries) is the most innovative economy among the countries in Central and Eastern Europe, followed by the Czech Republic (27th position, also a country with high per capita income). Hungary is ranked 33rd (country with high per capita income) and Slovakia (also high per capita country) is ranked 36th. Bulgaria, as a country in the upper middle-income group, is ranked 37th, followed by Poland (high per capita income country) at 39th rank. According to the Global Innovation Index 2018 Innovation Inputs sub-index, the country ranking is as follows: Austria, Czech Republic, Poland, Slovakia, Hungary and Bulgaria. On the other hand, according to the Global Innovation Index sub-index of output, the ranking is: Czech Republic, Austria, Bulgaria, Slovakia, Hungary and Poland. The Global Innovation Index Report (2018) also found that globally, R&D spending increased by about 3% and business R&D spending by 4.3% in 2016 compared to 2015. In addition, there is a link between innovation performance and the level of development of countries as measured by GDP per capita. Countries with high per capita incomes are more innovative when their economy has a more diversified industrial and therefore export structure.

Also in the 2018 European Innovation Scoreboard, the Czech Republic (87/100), Hungary (70/100) and Slovakia (68/100) are positioned as “moderate innovators”. For Slovakia, the most important positive effects of innovation are in terms of employment and sales volumes, as in Hungary, but the lack of support for innovation and the low share of employees in science-intensive services remain problematic. For Slovakia, the target by 2020 is to have R&D in GDP at 1.20%, which can be determined as ambitious given that in 2018 R&D spending stood at 0.88 % of GDP. Slovakia is highly dependent on EU funds for RD & I and Horizon 2020 was conducive in allocating about EUR 90 million to more than 200 Slovak research centers and innovative firms (IMF, 2019). Lastly, Bulgaria is ranked as a “modest innovator” in the CEE group, with innovation reaching 48% of the EU average and major problems facing the country's innovation potential remain insufficient financial support for innovation, GDP per capita, which is below the EU average and the low share of medium and high-tech industrial output (11 % of EU average). Regarding R&D expenditure in Bulgaria in 2017 private R&D accounted for 0.53 % of GDP, while public R&D ranked among the lowest in EU of 0.21 % of GDP (while EU average was 0.69%), well behind the R&D target of 1 % of GDP for 2025.

As per Global Entrepreneurship Report 2018, only Bulgaria, Poland and Slovakia in CEE from a total of 54 countries in the world were analyzed. The three countries are in the group where entrepreneurship is predetermined by the level of resource efficiency, with Poland taking the leading place, followed by Slovakia and Bulgaria. In Slovakia, entrepreneurship is encouraged by the efficiency of physical infrastructure and R&D transfer. With regard to Bulgaria, the highest indicator among the conditions for entrepreneurship is noted in the efficiency of the physical infrastructure, and the most unfavorable ones are the inefficiency of the state policies for supporting entrepreneurship and educational conditions at school age. Leading economic sectors in Bulgaria are tourism, IT, agriculture, pharmaceuticals and textiles (IMF, 2018). The export of high-tech production as a share of total industrial production has been 6,68 % (2004-2019). Structural obstacles to export competitiveness of the country is the rapid wage growth (labor costs rise by 8,3 %) outstripping growth of labor productivity (2,5%) and predominant trade concentration to Euro zone and Turkey (IMF, 2019).

In addition, according to the Global Competitiveness Report 2017/2018, which analyzes 137 countries, Switzerland is the leading economy, followed by the United States and Singapore. Among the CEE countries, Austria (18th) is leading, followed by: Czech Republic (31st), Poland (39th), Bulgaria (49th), Slovakia (59th) position) and Hungary (60th position). In Bulgaria and Slovakia the main problematic area for competitiveness and business is the level of corruption.

2.2.Macroeconomic and institutional factors with an impact on analyzed frontier stock markets

The empirical results regarding the **macroeconomic and institutional factors** influencing stock market development in Bulgaria and in Slovakia are indicative of the following:

Bulgaria

An applied ADF test on all variables included in the model determined their stationarity. The **macroeconomic factor variables** analyzed and their relationship with the dependent market capitalization/ GDP variable, the Engle-Granger cointegration model established the existence of statistically significant cointegration dependencies only between: 1) the real interest rate and the market capitalization (-); 2) broad monetary aggregate M3 and market capitalization ratio (+); 3) domestic credit to non-financial institutions /GDP and market capitalization (-). The correlation matrix of the eight macroeconomic variables included in the empirical model established significant correlations between: 1) a broad monetary aggregate M3 and market capitalization ratio (positive correlation of 0.68) and 2) total value of trade/GDP and gross capital accumulation/GDP correlation of 0.71).

Next, an applied first-order Engle-Granger cointegration model established the following statistically significant dependencies on the role of **institutional factors** on the development of market capitalization in Bulgaria: only variable democratic accountability and public voice is statistically significant for market capitalization, as improvement in the score for accountability by 1 pp is associated with an increase in the market capitalization of the Bulgarian stock exchange by

149 pp. The model explains about 34% of changes in market capitalization with changes in institutional variables; 2) an increased assessment of political stability by 1 pp in the country is associated with an increase in market capitalization by 28 pp; 3) increased assessment of corruption control by 1 pp in Bulgaria is associated with an increase in market capitalization of 21.9 pp; 4) the reduced assessment of regulatory quality in Bulgaria by 1 pp is associated with a decrease in the market capitalization of the stock exchange by 19.6 pp. In a report by the IMF (2018) it has been noted that some of the institutional obstacles relating to institutional environment include widespread corruption, weaknesses in judiciary and organized crime. The protection of property rights is also questionable (e.g. unavailability of the Commercial Register 2018 for almost a month and National Revenue Agency leakage of personal data of more than 5 mln citizens in 2019) with negative impact on the business environment. This corresponds with the findings as follows: 1) in the ECB Convergence Report 2018, where for Bulgaria it specifically recommends achieving sustainable convergence with macroeconomic and fiscal stability, which requires stable institutions and a supportive business environment. 2) In addition, the European Commission's Convergence Report 2018 sets out other important factors for Bulgaria's economic integration and convergence (Article 140, 1 TFEU), among which are the stability of the institutional environment, and pays particular attention to the current weaknesses: the relatively poor quality of institutions, weaknesses in governance (weak administrative capacity, legal uncertainty, lacking ex-post assessments), and corruption (i.e. Bulgaria placed last in EU by Transparency International 2017 Corruption Perception Index with score 43, while EU average being 65). 3) In the European Commission Country Report (2019) Bulgaria has been characterized as underperformer per EU Quality of Governance Index, the World Bank Worldwide Governance Indicators and Bertelsmann Stiftung Sustainable Governance Indicators.

The correlation matrix of the six institutional variables included in the empirical model in Bulgaria established significant correlations between: 1) democratic accountability and public voice and market capitalization (positive correlation of 0.76). 2) government and policy effectiveness and democratic accountability and publicity (positive correlation of 0.49).

Slovakia

An applied ADF test on all variables included in the model determines their stationarity. For the **macroeconomic factor variables** analyzed and their relation to the dependent market capitalization/ GDP variable, the Engle-Granger cointegration model established a statistically significant relationship between: 1) the real interest rate and market capitalization (+); 2) GDP growth and market capitalization of the Bratislava Stock Exchange (+); 3) the inflation rate and market capitalization (-); 3) domestic savings and market capitalization (-). The correlation matrix of the variables included in the model establishes: 1) Inflation rate and GDP growth (positive correlation of 0.40). 2) Internal savings and inflation rate (negative correlation of 0.46).

Applied first-order Engle-Granger cointegration model established statistically significant dependencies on the role of **institutional environmental factors** on the development of market capitalization in Slovakia as follows: 1) political stability in Slovakia and market capitalization (+); 2) reduced score on democratic accountability and public voice is associated with a decrease in market capitalization; 3) raising the estimate of the rule of law is associated with an increase in market capitalization (+). According to IMF report (2018) Slovakia still needs improvement in regard the quality of institutions in the judiciary field (lengthy court procedures, low prosecution rates against public officials, frequent changes of laws) and in public administration services (political influence, weaknesses in public procurement). A correlation matrix of the relationships between the institutional variables included in the model and the market capitalization of the Slovak Stock Exchange established: 1) Political (in) stability and market capitalization (negative correlation of 0.70). 2) The deterioration of corruption control and democratic accountability & transparency scores (negative correlation of 0.46) and this is confirmed by the fact that perceptions of corruption continue to persist on a high level (IMF, 2019). 3) Government efficiency and regulatory quality (positive correlation of 0.66). 4) Rule of law and regulatory quality (positive correlation of 0.56). 5) rule of law and government effectiveness (positive correlation of 0.65).

Other quantitative and qualitative factors in the business environment influencing stock markets (directly or indirectly) in Bulgaria and Slovakia have been presented in Table 4 (Appendix). Last but

not least, based on the presented empirical results above, it can be inferred that he report has proved hypothesis 1: positive relationship between stock development and economic growth exists on frontier stock markets, which presupposes improvements in the competitive and innovative potential of enterprises. Hypothesis 2 has also been corroborated: the factors in the business environment can be a driving or a deterring factor in stock market development in frontier stock markets as that of Bulgaria and Slovakia.

Conclusions

The analysis of the framework factors of the business environment on Slovakian and Bulgarian frontier markets established the combined influence of the institutional and macroeconomic environment for boosting the role of the stock market in activating economic growth through complementarity of banks and the stock market in financing enterprises of the real economy and supporting their innovativeness and competitive potential in the current global realities. Both stock markets are characterized with structural limitations relating to the small size of the economies due to which the stock market could not provide economic effectiveness of scale for the listed companies under conditions of low liquidity, high price volatility and insufficient depth of the market.

Therefore, for the group of countries with peripheral stock markets, the results of the impact of macroeconomic factors confirm the underdevelopment of their stock markets and the dominance of the banking sector in them (by targeting savings primarily to banks and securing financing for investments mainly from the banking sector): 1) the negative relationship between savings and market capitalization in Slovakia and 2) the negative relationship between domestic credit to non-financial institutions / GDP and market capitalization in Bulgaria.

In peripheral stock markets, empirical analysis confirms their underdevelopment and the dominance of the banking sector in financial intermediation, as well as the need for institutional improvements in the regulatory quality of institutions and political stability. Consequently, the benefits of financial integration in the Capital Markets Union in EU for small scale and underdeveloped frontier stock markets as that of Bulgaria and Slovakia can hardly be realized at the background of prospective post-Brexit environment, rising trade protectionism and uncertainties in the business agents all leading to heightened volatility at global financial markets. The Capital Markets Union will be a challenge for such stock markets in EU requiring institutional and market adaptation of all capital market stakeholders under conditions of numerous institutional, macroeconomic, structural, demographic, etc. weaknesses in the “façade” democracy (Ritter, 2014) and continuing erosion of division of state powers (Radev, 2019).

Future Directions

The entire evaluation of the framework factors influencing frontier stock markets in the new global realities will require future research to follow interdisciplinary approach and application of systemic methods of analysis due to the non-linear nature of the processes unfolding on stock markets. The theoretical framework could be further enriched by factoring in such components as technological and digital dimensions, climatic and other exogenous variables of the business environment and evaluating their impact on stock markets and economic development.

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Appendix

Table 1

Market capitalization on stock exchanges in CEE countries in EUR billion

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Austria	64.5	107	151	161.7	54.7	79.5	93.9	65.6	80.4	85.3	79.9	87.9	95	127.7
Bulgaria	2	4.3	7.8	14.8	6.4	6	5.4	6.4	5	5	4.9	4.4	4.9	2.3
Poland	51.8	79.3	112.8	144.3	65.1	105.2	142.3	107.5	134.8	148.6	140.9	126	130.9	169
Slovakia	3.2	3.7	4.2	4.6	3.9	3.6	3.4	4.2	4.1	4.1	4.4	5.1	5.3	5.6
Hungary	21	27.6	31.7	31.5	13.3	20.8	20.6	14.6	15.7	14.3	12	16.9	21.3	26.3
Czech Republic	21.7	31	34.7	47.9	29.6	31.2	31.9	29.2	28.2	21.9	22.6	23.5	38.6	49

Source: Data from respective stock exchanges and the Federation of European Stock Exchanges for the respective years

Table 2

Turnover ratio on stock exchanges in CEE countries

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Austria	29.54	34	43	54.6	128.6	45.1	38.75	45.5	22.2	22.5	29.6	33	32.8	26.2
Bulgaria	16.3	15.3	18	31.3	14.8	5.7	5.1	3.9	5.05	13.1	6.1	3.5	7.7	4.2
Poland	25.2	27.9	35.7	42.6	56.9	37.5	56.9	37.5	52.8	33.9	35.5	34.2	38.2	35
Slovakia	0.8	0.07	0.4	0.45	0.39	3.43	7.41	8.3	3.6	2.28	1.9	6.2	1.7	1.4
Hungary	49.8	68	73.8	102.3	149.2	90.5	95.5	83.3	52.8	54.6	49	42	40	33
Czech Republic	66.9	98.4	64.8	54.8	78	42.4	29.23	36.36	28.13	30.6	24.7	26.4	16.8	10.6

Source: Data from respective stock exchanges and the Federation of European Stock Exchanges for the respective years

Table 3

Regulated market turnover on stock exchanges in CEE countries in EUR billion

Country	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Austria	19.4	37.5	64.8	94.4	71.8	36.4	36.8	30.2	18.1	19.4	23.9	29.2	27.9	33.4
Bulgaria	0.338	0.683	1.2	3.9	0.939	0.339	0.280	0.248	0.274	0.656	0.298	0.156	0.176	0.967
Poland	12.2	21.8	40.4	61.2	45.8	38.8	52.3	61.6	45.1	52.6	49	48.6	43.6	55.4
Slovakia	0.208	0.112	0.334	0.108	0.430	0.310	0.216	0.452	0.585	0.392	0.850	0.317	0.898	0.583
Hungary	10.3	19.1	22.5	34.4	13.3	18.5	19.9	13.7	8.4	7.8	5.9	6.9	7.3	8.7
Czech Republic	0.217	0.545	28.4	35.9	29.6	31.2	31.9	15	9.9	6.7	5.6	6.2	6.5	5.2

Source: Data from respective stock exchanges and the Federation of European Stock Exchanges for the respective years

Table 4

Additional Factors in the Business Environment in Bulgaria and Slovakia with Possible Impact on the Stock Markets

Factor	Bulgaria	Slovakia
EU fund utilization	Degree of EU funds utilization of 41.8 % (European Commission, 2019). Electronic public procurement delayed. Higher absorption likely to boost growth further.	About 70 % of EU funds allocated by 2018-end representing approximately EUR 11.7 bln. with 11,531 SMES expected to benefit from broader access to finance. Need for raising staff expertise and capacity, better transparency and simplified rules to drive competitive procurement process (IMF, 2019).
Low level of venture capital	Limited access to venture capital and business angel financing due to small size of the markets and reliance on public support for start-up SME financing	
Intercompany indebtedness	Credit to corporations rose by 5.4% in 2018 while non-financial corporate debt stood at 80 % of GDP in 2017.	Significant rise to 55.5 % of GDP while credit to SMEs slowed to below 5 % indicating Slovak enterprises rely on supply chain financing, EU funds and own accumulated funds and not on the stock market as a source for financing.
Labor market shortages of skilled labor	For both frontier markets this could deter economic expansion and speed wage inflation with possible negative impact on competitiveness, attraction of investors (IMF, 2019). Both countries exhibit unsatisfactory results from educational systems' reforms and inadequacies in entrepreneurial skills with negative effects on stock market development due to low labor productivity	
Income inequality	The S80/20 indicator among the highest in EU (being at about 8) (European Commission, 2019).	The S80/20 indicator in Slovakia among the lowest in EU being 3.5 against EU average of 5.1 in 2017 (IMF, 2019).
Regional disparities	GDP per capita in the capital city nearly 50 %; attracting more than 50 % of non-financial FDI (European Commission, 2019).	GDP per capita in the capital city at 184 % against 53 % in less developed regions in Slovakia (53%) (IMF, 2019).
Public administration	Insufficient improvements, regulatory uncertainties, low perceptions of quality of public services (European Commission, 2019)	Persistent weaknesses and inefficiencies deterring entrepreneurship and investments (IMF, 2019)
Level of digitalization and technological	Very low levels of digital skills (European Commission, 2019)	Low levels with insufficient patenting activity and low

advancement	and last place in EU in the field of entrepreneurship which challenges capacity to attract investment	knowledge diffusion.
Climate challenges	The most energy intensive economy in EU with negative impact on productivity and competitiveness. High air pollution.	Energy intensity above EU average. High vulnerability to climate risks (floods, erosion, droughts, storms, air pollution)
Share of the shadow economy	In Bulgaria shadow economy represents relatively higher that EU average (29.6 % in 2017, IMF) while in Slovakia it stood at 9.7% in 2016 (EY).	
Demographic trends	Persistency in net emigration flows and negative rate of natural population change pose unfavorable risks for fiscal sustainability, GDP growth and real convergence	Significant emigration outflows impacting on domestic labor supply

Source: data from sources cited in the table

SUSTAINABLE DEVELOPMENT AND INCLUSIVE ECONOMIC GROWTH

SOCIAL PROTECTION IN ROMANIA – BETWEEN NECESSITY AND SYSTEMIC EFFICIENCY. AN ANALYSIS AT THE LEVEL OF SOUTH-MUNTENIA REGION

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Abstract:

In the context of the multiple structural modifications intervened in Romania, the social policy is in a permanent process of adjusting to the economic realities, as well as with the manifestation, at different intensities and different amplitudes of the forms of social risks which can emerge. Starting from the present differences between the different pannels (national versus regional, intra-regional, or on residence environments), the present approach is wishing to make an analysis of the efficiency of the the social protection system at the level of one of the biggest regions, respectively the South-Muntenia region, which is re-grouping seven counties with different characteristics, not only from the point of view of the geographical placement, but also of the nature of the activities developed, which are influencing, among others, the local social system.

Key words**:** *social protection, efficiency, policies*

JEL Classification**:** *H50, H55*

Introduction

Re-grouping the counties with different demo-economic, social, eenvironmental characteristics, South- Muntenia region is inscribed in the general trend of the insufficient implementation of some proper social policy measures in ratio to the necessities existent at local level. From this point of view, the present approach wishes to make a radiography of what means the social protection in the third big region of the country, from the perspective of the contribution to the formation of the National gross domestic product.

Stage Of Knowledge

The issue of the need to implement some efficient social protection mechanisms gave way to multiple debates, both among the civil society, and mainly, at the level of decident factors, with sspecific attributions in this respect. Multiple studies made at national level from the perspective of a proper measuring of the social protection measures met, first, with the limits imposed by the fiscal-budgetary of the State, to which was added, many times, the lack of its correlation with the real need to support the persons being in situations which claim for a corrective intervention on behalf of the State.

To these,there are added the studies made at international level which are reflecting the significant gaps existent between the different types of social policy measures implemented in other Member states and the efficiency of the national ones in ratio to the current needs.

In this context, the present approach, through the analysis made at regional level proposes itself to bring back into discussion the need to identify the best measures for social support, in view of reducing the pressure upon the existent labour force, but also of ensuring a minimum living standard for the persons under certain social situations.

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Material And Method

From methodological point of view, the present approach is based on public statistical information supplied by the national statistics, through the Tempo-Online database. In view of catching the evolution of the main value indicators which are characterizing the social protection system, for the ensuring of the data comparability it was proceeded to the transformation of the values into constant prices of the last year- statistically available. In the catching of the main evolutions of indicators, there were utilized well known statistical methods, of the comparisons, structures, dynamics' type. In ratio to the covered time period, it is imposed the statement that this is afferent to the interval 2007-to the present, respectively of the post-accession period.

Results Obtained

Given being the national dimension of the social protection measures, a first indicator held in view resides in the quantifying of the budget allocated to such measures, by comparison, on one side, to the level of the expenses, and also to the share in the GDP of the amounts dedicated to social protection.

From this latter perspective, we must precise the fact that, except the period 2009-2011, when the share of the expenses with the social protection in GDP oscillated between 16.4% and 17.3%, periods 2007-2008, respectively 2012-2017 do not exceed a level of the expenses of 15 percentages in the GDP.

Although in nominal terms we could say that the post-accession period marked a doubling of the level of expenses and incomes afferent to the social protection system, in real terms, given being the inflation rate, the budgeted sums aand expenses in this respect decreased by around 27%.

Taking into account the stock of available statistical information at regional level, we must precise that in the period 2007-2018 the social protection expenses with the unemployment decreased, in constant values, with percentages oscillating between -44.8% (Ialomiţa) and -66.9% (Argeş) (Table 1).

Table 1.

Dynamic of the expenditures to unemployed social protection in 2018 comparative with 2007 (%)

	Nominal values	Real values 2018
TOTAL	-34.1	-54.3
South-Muntenia	-36.0	-55.6
Argeş	-52.4	-66.9
Călăraşi	-25.5	-48.3
Dâmboviţa	-23.1	-46.6
Giurgiu	-27.9	-49.9
Ialomiţa	-20.6	-44.9
Prahova	-53.2	-67.5
Teleorman	7.3	-25.5

Source: Calculation on the Tempo-Online databases, National Institute of Statistics, 2019.

As share in total expenses with unemployment protection, the counties Argeş, Dâmboviţa and Prahova, characterized by pluri-activities from all fields of activity, attracted in the year 2007 around 68 percentages from total of these expenses, percentage which was reduced in the year 2018 to 56.1% (Table 2).

Table 2.

Structure of the expenditures to unemployed social protection in the period 2007-2018 (%)

	Argeş	Călăraşi	Dâmboviţa	Giurgiu	Ialomiţa	Prahova	Teleorman
2007	23.7	5.2	13.1	6.0	9.1	31.1	11.8
2008	23.1	5.3	12.8	5.6	9.4	30.8	12.9
2009	25.9	5.6	12.4	5.3	7.8	31.7	11.4
2010	22.3	6.2	14.3	6.0	8.3	31.2	11.7
2011	19.9	6.4	15.1	7.1	8.2	31.4	12.0
2012	19.3	7.0	15.4	7.2	8.6	30.8	11.7
2013	20.6	6.7	18.4	8.7	8.2	26.2	11.2
2014	23.5	7.4	15.5	7.2	8.8	24.7	13.0
2015	20.2	9.5	13.2	10.1	9.2	22.9	14.9
2016	18.4	6.7	14.6	7.2	10.4	25.2	17.6
2017	18.1	6.9	14.6	7.7	11.1	23.8	17.8
2018	17.6	6.0	15.7	6.8	11.3	22.8	19.8
2018/2007 (%)	-6.1	0.9	2.6	0.8	2.2	-8.4	8.0

Source: Calculation on the Tempo-Online databases, National Institute of Statistics, 2019.

In the absence of any information relevant to the efficiency of social protection measures regarding the unemployment or only the budget available, alloted to this support measure, we must precise that in the period 2007-2018, the expenses afferent to the fight with social marginalization of the unemployment were inscribed on a strongly descending slope, both in nominal terms, but mainly in real terms (Table 3).

Table 3.

Dynamic of the expenditures to unemployed social protection in 2018 comparative with 2007, from the fighting against social exclusion perspective (%)

	Nominal values	Real values 2018
TOTAL	-76.4	-83.6
South-Muntenia	-78.1	-84.8
Argeş	-38.0	-57.0
Călăraşi	-68.6	-78.2
Dâmboviţa	…	…
Giurgiu	-90.7	-93.5
Ialomiţa	-73.5	-81.6
Prahova	-48.9	-64.5
Teleorman	-91.9	-94.4

Source: Calculation on the Tempo-Online databases, National Institute of Statistics, 2019.

Practically, if per total country, the expenses with the reduction of social marginalization of the unemployment were diminuted in the year 2018 comparatively to the year 2007 with noneless than around 84%, at the level of each county-component of the South-Muntenia region the trend is more alarming. Two of each of the seven counties (Giurgiu and Teleorman) are approaching very quickly to the lack of any financial support measures from the State, the recoil exceeding, averagely, 94%.

At the level of the year 2018, the Romanian State paid for the ensuring of the minimum guarranteed income significant sums, increasing both per total country, and per ensemble of South-Muntenia Region. The approximative 6 percentages for increasing these expenses per ensemble of the South-Muntenia Region were due, mainly, to the significant increase with over 20 percentages in the counties Ialomiţa and Teleorman, while the rest of the counties have attenuated the budget effort allocated in this respect (Table 4).

Table 4.

Dynamic of the social allowances assuring the minimum guaranteed income (lei 2018)

	Total	South -Muntenia	Argeş	Călăraşi	Dâmboviţa	Giurgiu	Ialomiţa	Prahova	Teleorman
2011	186704	35205	6372	4067	6685	3152	2903	4575	7451
2012	192713	36076	6753	4031	6702	3512	2865	4546	7667
2013	217109	41604	7334	4596	7975	3755	3394	5252	9298
2014	240617	46385	8052	5131	8905	4120	3804	5826	10547
2015	245545	48554	8405	5272	8956	4700	4042	6030	11149
2016	244814	47155	8305	5141	8620	4294	4144	5633	11018
2017	233966	43848	7745	4536	7918	3857	3957	5333	10502
2018	202976	37275	6707	3712	6416	3041	3536	4638	9225
2018/ 2011 (%)	8.7	5.9	5.3	-8.7	-4.0	-3.5	21.8	1.4	23.8

Source: Calculation on the Tempo-Online databases, National Institute of Statistics, 2019.

An extremely important indicator which characterises the Romanian social protection system is referring to the retired persons number and, implicitly, to the level of the average pension paid by the budget.

Correlated to the dynamics of the degree of occupation, the importance of this inddicator derives also from the necessity to reduce the financial pressure exercised by the payment of pensions from a non-sustainable financial system on long-term.

From this perspective, we must precise that in the period 2007-2018, the average number of retired persons in the system of State social securities was reduced at level of the South-Muntenia Region, a trend divergent with the national average, with percentages oscillating between -2.1% (Argeş) and +0.4% (Prahova), percentages net inferior to the number of farmers retired persons (Table 5).

Table 5.

Dynamic of the total number of pensioners in 2018 comparative with 2007 (%)

		2018/2007
Social insurance pensioners	TOTAL	0.9
	South-Muntenia	-4.3
	Argeş	-2.1
	Călăraşi	-8.2
	Dâmboviţa	-9.0
	Giurgiu	-9.7
	Ialomiţa	-5.3
	Prahova	0.5
	Teleorman	-4.6
Farmers	TOTAL	-64.0
	South-Muntenia	-64.3
	Argeş	-66.7
	Călăraşi	-63.3
	Dâmboviţa	-66.4
	Giurgiu	-64.3
	Ialomiţa	-62.4
	Prahova	-65.3
	Teleorman	-63.2

Source: Calculation on the Tempo-Online databases, National Institute of Statistics, 2019.

Modifications which intervened in the structure of the average number of retired persons, as well as the necessity of correlating the pensions system with the need for protecting the beneficiaries of this system facing the rate of inflation evolutions, have led to the implementation of some specific measures, respectively the increase the value of pension point or the re-thinking of the policy in this field.

As result, the period 2007-2018 is ccharacterized by a tendency to increase the value of the average pension, both for the retired persons coming from the state social securities system, but mainly of the farmers retired persons, who, except the counties Călăraşi and Ialomiţa are registering during the post-accession period a triple of the afferent pensions value (Table 6).

Table 6

Dynamic of the monthly average pension at the regional level in 2018 comparative with 2007

	Monthly average pension in the state social insurance (%)		Monthly average pension - farmers (%)	
	Nominal values	Real values 2018	Nominal values	Real values 2018
TOTAL	182.2	95.9	191.2	102.2
South-Muntenia	188.8	100.5	193.2	103.5
Argeş	194.4	104.4	208.3	114.1
Călăraşi	182.4	96.1	186.1	98.7
Dâmbovi̇ţa	191.6	102.5	201.3	109.2
Giurgiu	184.1	97.2	189.7	101.1
Ialomiţa	187.9	99.9	186.4	98.8
Prahova	183.1	96.6	200.7	108.7
Teleorman	190.1	101.5	189.2	100.8

Source: Calculation on the Tempo-Online databases, National Institute of Statistics, 2019.

Conclusions

Without proposing ourselves during this short approach a more detailed analysis of the social protection system at the level of South-Muntenia region and component counties, given being the limitation of the informational support, we must precise the fact that the evolution of the present social protection system developed under the impact of some contradictory factors, which, many times, have blocked the imprint of a clear direction.

The social pressure, correlated with the lack of a clear strategy in this field have generated a reduced level of the efficiency of the support measures, the positive effects being reduced in ratio to the social needs manifested with different intensities at local level.

In this context, the necessity of intervention on behalf of the State becomes so much necessary, not only from the perspective of allocation of a supplementary sum for the protection of the persons under less-favoured situations, but mainly of monitoring these measures' degree of efficiency.

In this respect, the program documents elaborated at national level must be based on an objective evaluation of the necessities existent within each community, such that the allocation of some limited budget resources reach, as possible, the goals proposed, respectively to protect the vulnerable population categories.

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DEVELOPMENT OF PETROLEUM INDUSTRY IN ROMANIA IN THE PERIOD OF CONTROLLED ECONOMY (1948-1989)

Marius BULEARCĂ[51]

Abstract:

The development of the Romanian oil industry covers a relatively short period of only 160 years, but the interest that oil had produced has been and still remains enormous. The Nationalization of the Romanian and foreign oil companies from June 11, 1948, made the first step towards the absolute management and control of the Romanian oil industry, the clear signal of Romania's political and economic isolation, with all its consequences, at least until 1964. However, the numerous international cooperation projects, spread in many countries all over the world, took various forms, involved many Romanian specialists and totalled billions of dollars, amounts with which the oil industry contributed to the economic development of Romania between 1948 and 1989.

Keywords: *oil industry, refinery industry, oil and petroleum products trade, international cooperation*

JEL classification: *Q35, N50, K11*

Introduction

The development of oil industry has taken place in several phases, during the last 150 years. The influx of foreign capitals contributed immensly to the development of this industrial sub-branch (Constantinescu, 1937, p. 57-59; Savin, 1947, p. 45), their role being positive in the beginning period of modern industrialization, when the economic development of the country required immediate valorization of oil resources, something impossible to achieve only by domestic mobile capital, quantitatively insufficient and lacking entrepreneurial spirit.

During a century since the achievement of the Great Union of 1918, several phases of the evolution of oil industry are distinguished, namely:

- the interwar period (1918–1939);
- the period of the Second World War (1939–1945);
- the period of the first post-war years (1946–1947);
- the period of the controlled economy (1948–1989); and
- the transition period from the controlled economy and the integration into the European Union (after 1990).

In our previous work (Bulearcă, 2018), we analyzed the oil industry in Romania between 1918-1948, that covered the first three phases previously announced, during which the domestic and foreign capital played a decisive role in the development of this sector of activity of the national economy, after the Great Union from December 1, 1918. Therefore, in this article we will continue the analysis of the Romanian oil industry up to 1989, with the presentation of the main elements that marked the development of this economic sector during the controled economy (period 1948-1989). Moreover, our future paper will thorughly deal with presenting the evolution of petroleum industry in Romania after 1990, thru the integration into the Eurpean Union and the present status of this important sector of the economic activity.

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1. The legal framework

At the end of 1947, the Romanian oil industry was characterized by the continuous decrease of oil production, an advanced wear of installations and equipment, the dramatic reduction of imports of petroleum materials and equipment, the blocking of the re-engineering process, the disappearance of Romanian petroleum products from traditional markets, the almost exclusive delivery of petroleum products to the USSR, and the establishment of the company Sovrompetrol, through which the Soviet state controlled an important segment of the Romanian oil production, processing and export (Buliga et al., 2014).

In 1948, before the Nationalization of June 11, 55 oil companies were operating in Romania, of which 8 companies owned 94% of the total production, namely: ”Astra Română”, ”Steaua Română”, ”Concordia”, ”Creditul Minier”, ”Prahova”, ”Redevența”,“ Petrol-Block ”, IRDP and Sovrompetrol. The origin of the capital was as follows: 64% Western capital (American, British, Italian, French, Dutch and Belgian), 31% Soviet capital and 5% Romanian capital (Savin, 1947). 33 production sectors were exploited, with a total of 3,391 wells, of which 2,104 wells in production (Ivănuș et al., 2008).

On April 13, 1948, the new Constitution was approved which provided that: “...the riches of all kinds of the underground soil, the mining fields, the sources of natural energy, the roads of communication, railways, roads, on water and in the air, post, telegraph, telephone, radio belong of the state as common goods of the people”.

On June 11, 1948, in the context of nationalization of the main means of production, the role of private initiative in the exploitation and use of oil resources was liquidated for several decades. During the period of the controlled economy, an Oil Law no longer worked, the activity being carried out on the basis of the annual plans (according to the five-year plans), while the specific norms and decisions in the field were made by "Orders" of the minister responsible for that industry or HCM - decisions of the Council of Ministers (Moldovan, 1983).

Following the Nationalization of June 11, 1948, capitalist oil companies passed into State ownership. Thus, in their place two State-owned enterprises were created: "Petrolifera Muntenia", with headquarters in Bucharest and technical direction in Câmpina, for activity in the regions of Muntenia and Oltenia, and "Petrolifera Moldova", with headquarters in Bucharest and technical direction at Moinești, for the regions of Moldova. Together with these two Romanian State-owned companies, Sovrompetrol has been active in the Romanian oil industry until 1955 (Buliga et al., 2014).

The company "Petrolifera Muntenia" worked, until 1950, when it was disbanded, by merging with "Petrolifera Moldova" and Sovrompetrol, the activity being organized on regional drilling and extraction trusts, respectively. The company was re-established in 1955, with the objective of liquidating the old nationalized oil companies and extinguishing foreign debts, and it worked until 1974, when it was disbanded by absorption in the Bolintin drilling-extraction enterprise. Apart from the normal activity carried out within the three subordinate departments, the company "Petrolifera Muntenia" also took over the archives of the nationalized oil companies, created and pursued 59 funds of the nationalized companies for their liquidation and acted to settle their foreign debts (Pearton, 1971; Moldovan, 1983; Buliga et al., 2014).

2. The geological research activity and oil reserves

After 1948, ***the activity of geological research*** carried out by specialized institutions and companies aimed at restoring the known deposits in production, the inventory of oil reserves (oil, associated and free gases, condensate) and the discovery of new deposits (Mălureanu and Neguţ, 2001). From the official data, published with the strict censorship of those times, the special attention given by the communist Government to the extractive and oil processing industry results (Pearton, 1971).

Thus, in the period 1950–1964 (the period of restoration and relaunching of this branch) major investments were made, valued at 30.77 million stabilized lei (of which, only in the period 1950–1959, of 18.37 stabilized lei); from this point of view, investments in oil ranked second in the economy, after coal, but being double compared to other industrial branches and ***being mainly***

directed to the exploration and exploitation drilling (Preda, 2001; DCS, 1965; Steaua Română, 1995). Thus, after 1948, there was an intense development of the drilling activity, especially the one for the geological research, which in 1955 increased by 54% compared to 1944.

Between 1963 and 1980, the volume of geological works by drilling was maintained around an average value of 700-800 thousand meters per year, although the average cost per drilled meter increased continuously (CIDE, 1983), from an average value of 1,500 lei per drilled meter (in 1963) to 4,100 lei/m drilled (in 1980), while for deep wells, the unit cost increased from an average of 4,200 lei/m drilled (in 1963) at 7,700 lei/m drilled (in 1980), due to the difficulties in conducting the wells, the increase of the depth and complexity of the geological investigation operations. According to these costs, the specific investment (indicator of economic efficiency of the activity of reserves discovering) has increased continuously (CIDE, 1983), from an average value of 3,700 lei/m drilled (in 1963) to 7,900 lei/m drilled (in 1980), indicating a low level of efficiency.

Thus, as a direct result of those intense drilling activities, if in 1950 deposits were located in only two major geological units (Depression of the Eastern Carpathians and Depression of the Southern Carpathians), in 1989, their number increased to 9 major geological units (Depression of the Eastern Carpathians, Depression of the Southern Carpathians, the Panonic Depression, Maramureş Depression, Barlad Depression, Moesian Platform, Moldavian Platform, North-Dobrogean Promontory and the Continental Black Sea Platform) (Constantinescu and Anastasiu, 2015).

In 1989, the drilling activity (geological research, exploitation and injection wells, wells repairs, samples for production, preparation and maintenance of drilling fluid, construction and assembly works, etc.) was carried out within 9 branches (which included 19 drilling enterprises), and of the company "Foradex" Bucharest and "Petromar" Constanța.

As a result of these large investment efforts, in 1989, ***the proven oil reserves of Romania*** reached 200 million t (Ivănuş et al., 2008).

3. Oil extraction activity

The extraction activity, as well as the drilling activity, has undergone an intense development after 1948, as a result of the introduction of new technologies, as well as due to the extension and the refinement of existing ones.

Hence, as a result of the extension of the complex research activity of the subsoil, ***the oil production of Romania*** registered a continuous increase, reaching the maximum level of 14.7 million t of crude oil in 1976. In order to obtain these production increases, important drilling works were executed, from 657,000 m (of which 44% for exploration drillings) in 1950, to a maximum of 1,814,000 m (of which 197,000 m at depths over 3,500 m) in 1980. Moreover, great depth drilling represented about 25% of the total drilling volume (respectively over 2,000,000 m drilled). A significant example is the completion, in 1984, of drilling at the 7,000 Băicoi well, which reached a record depth of 7,025 m, being one of the deepest wells in Europe and in the world (Ivănuş, 2008).

In 1970, Romania, with a production of 13.229 million tons of crude oil, ranked first in Europe (DCS, 1980).

Between 1963 and 1976, the production increased by about 20%, as a result of applying methods of increasing the recovery factor, but after 1976 (the year of the maximum oil production in Romania, of 14.7 million tons), there was a noticeable decline and costs increased continuously (CIDE, 1981). Thus, compared to 1963 (12.2 million tons of crude oil), production in 1979 (12.3 million tons of crude oil) was only 0.8% higher, while unit costs increased by 161% (from 92.87 lei per tone in 1963, to 242.4 lei/t in 1979), because a large part of the total production was obtained due to the growth of the recovery factor.

Applying the appropriate technologies, the recovery factor increased from 29.8% in 1973 to 31.77% in 1979, resulting in increased economic efficiency in oil extraction. In 1989, a number of ***216 processes for increasing the recovery of oil*** were applied in Romania, of which 161 industrial processes and 45 experimental processes. The share of additional crude oil production as a result of applying these recovery processes, from the annual production, increased from 8% in

1951, to 10.5% in 1974 and to 32% in 1992, while in 1999 it represented 27.8% of the total crude oil production of that year. As a result of the application of these processes, in the period 1950–1991, an additional 75.2 million tons of oil were extracted (representing 11.8% of the Romanian oil production).

The evolution of the investment effort also marked a continuous concern for the development of this sector (CIDE, 1983), so that the volume of investments for oil extraction amounted to 17.8 billion lei in 1971–1975, 26.9 billion lei during the period 1976–1980, rising to 36.3 billion lei in 1981–1985 and reaching a peak of 45.3 billion lei in 1986–1989. Between 1971 and 1989, by correlating the investment effort with the number of production capacities put into operation, a necessary effort of about 4.5-5 million lei per well was highlighted. As a result, in 1989, the number of productive wells in Romania reached a maximum of 16,000 extraction wells.

4. Oil resource consumption - oil refining activity

Because of forcing the productive potential capcaity of oil deposits, oil production decreased from about 15 million tons in 1975-1980, to about 10 million tons in 1985-1989, and Romania became an importer of crude oil, in the context of the excessive development of the refining capacity. Analyzing the international practice, the Romanian authorities at that time focused on acquiring the oil needed to cover the domestic consumption, on developing the petrochemicals and on carrying out refineries oriented towards the export of petroleum products, thus trying to take advantage and ”suck” profit from the last two operations.

Given that the capacity of the refineries developed until 1965 ensures the processing of crude oil from domestic production, the decision was made to build new refineries, much more than the immediate needs of the country, designed on certain imported crude oil (heavier, paraffinous and sulphurous), without having long-term contracts for the supply of these quantities (as international processors normally do). However, the international economic situation has forced the practice of raw materials and products trade in a "spot" regime with all its disadvantages and risks (the two oil shocks of the 1970s, the loss of traditional suppliers - Libya, Iraq, Iran).

Thus, in the field of ***relaunching the oil processing***, after the restoration of the main refineries destroyed during the war, in 1955 the construction of new refineries or the expansion of existing ones began, so that the capacity of the Romanian refineries increased from 7,522 thousand tons in 1951, to 13,671 thousand tons in 1956, exceeding the level before the war (DCS, 1959; Steaua Română, 1995).

From this perspective, the stages of refinery development were:

- post-war restoration, until 1950;
- "classic" developments, until 1960;
- rational modernization from 1960-1965 and continued until near 1970;
- expansion of production capacities from 1970 to 1989.

In this context, the most important achievements of the period were the following (Buliga et al., 2014):

- development of production capacities at Vega, Dărmăneşti, Astra, Teleajen, 9 Mai - Colombia, Câmpina and Brazi refineries;
- the modernization of existing refineries, such as Teleajen, Dărmăneşti, Oneşti refineries (newly built between 1952–1957, with successive modernizations in 1957–1960 and 1965) and Brazi;
- the development of major refineries, such as:

• Brazi (built from "the ground grass" (Ivănuş et al., 2008, p. 504) and came into operation in 1969, the raw material being made up of a mixture of sulfur oil from Iran, processing for the first time in the country of such crude oil requiring the construction of machinery with an appropriate metallurgy; the processing flow was completed in 1974-1975 with a series of installations necessary to complete its profile of fuels processing);

• Teleajen (development began in 1977 and was completed in 1979);

• Oneşti (development started in 1979 and ended in 1989);

• Midia (newly built between 1977–1985, located on the Black Sea shore, raised many problems because of the marine climate and unstable terrain, requiring the resolution of many ecological protection issues; for those times, the refinery became a standard for the Romanian facilities of that kind for the study and comparison of the technical performances and the economic results).

Thus, from an industry ruined by the war during the 1944 bomb shelling in Ploiesti area (where most of these refineries are located), through forced internal efforts, in an uncertain international context, the oil processing industry managed to reach in 1989 a complex structure, including all modern oil processing processes of the moment, being able to process 34 million tonnes of crude oil per year , double compared to the internal consumption needs, of crude oil of different types, to be converted into petroleum products and petrochemical raw materials required on the domestic and international market.

5. International cooperation

Regarding the international cooperation, after 1950, the specialists from Romania contributed with their knowledge and experience to the execution of complex studies regarding the exploitation of oil fields, to the accomplishment of technological and investment projects, as well as to the execution of works for prospecting and exploration, drilling, extraction, refining, infrastructure work, technical assistance, etc. Also, machines and equipment were delivered worldwide for different sectors of activity in the oil field.

The first external contract in the field of oil prospecting, exploration and production runs between 1958 and 1962 (Moldovan, 1983). The object of the contract was the research of the Mazari Serif Basin in North Afghanistan. The general contractor of the works was a Soviet company, and among the external subcontractors was the Industrialexport . The Romanian performance was in the conception, design and execution phases. The success was the discovery of the first commercial hydrocarbon deposits. The drilling and putting into production were also the merit of the Romanian specialists.

The granting by Romania of technical-material support to different countries of the world was perhaps more intense and significant than the imports made in this field. International oil cooperation has materialized on multiple levels: oil-oriented education, technical assistance, know-how, delivery of petroleum machinery and equipment, complete construction of complex installations and refineries, maintenance work and specialized service.

In support of these claims, the following achievements of the period are worth mentioning (Buzatu, 1998):

- drilling plants were exported to Algeria, Greece, the countries of South America, Germany, Iraq, Sudan, the countries of the former USSR, India, etc.;

- works were carried out for oil transport pipelines in Iraq and Turkmenistan;

- oil deposits were built in Jordan, Egypt, Syria, Kuwait, Abu Dhabi, Iraq, Albania, Syria, Pakistan, Turkey, totaling over 420 tanks of different types and capacities;

- high-tech machines have been designed, built and exported for refineries and chemical and petrochemical plants in Mexico (Salina Cruz & Caderta refinery), Bangladesh (Jamuna fertilizer factory), Saudi Arabia (Ras Tanura refinery), Greece (Aspropirgos refinery), Nigeria (Port Harcourt refinery), Kuwait (Ahmadi Mine refinery), etc.

The great experience of the international cooperation of the Romanian specialists in the oil refining was the accomplishment of some refineries "from the ground grass" (Ivănuş et al., 2008, p. 626) or the development and modernization of others, such as:

- in India: the Gauhati refinery (built between 1957 and 1960) and the Haldia refinery;

- in Pakistan: the National Refinery Ltd refinery;

- in Jordan: the Zarqa refinery (launched in 1980);

- in Syria: Banias refinery;

- in Turkey: the Kirkale refinery (belonging to Turkish Petroleum Corporation);

in Serbia (the former RSF Yugoslavia): the Pancevo refinery.

These investments and international projects totalled billions of dollars, amounts with which the oil industry supported the economic development of Romania between 1948 and 1989.

Conclusions

Since 1948, the extractive industry has undergone a powerful restructuring process, in the context of controlled economy. These restructurings have led to an increase in the role of the extractive industry in supporting economic and social development. Significant investment funds were also spent to capitalize on mineral resources that were not of the highest quality and sometimes of deposits under difficult conditions of extraction (high depth, complicated tectonics, low content of useful substance).

Even if, at certain times, the import of raw materials was more profitable, the internal effort was justified by a policy of ensuring an independent economic development of the country, which depends as little as possible on the external environment, by maximizing the internal natural resources. Thus, during the period of controlled economy, the most important resources were coal and oil, to which natural gas was added, along with metalliferous and non-metallic minerals.

These natural riches not only supported their own industrial development, but also constituted the main supplier of energy carriers and raw materials for industry, and ***exports of mining, oil and petrochemical products*** provided the foreign currencies for modernizing the entire economy, for imports of machinery and technologies for the development of extractive industry and, in particular, of manufacturing industry, but also for promoting the interests of the Romanian state in the world.

International cooperation projects have been widespread in many countries of the world, taking various forms, involving numerous Romanian specialists who have worked in all cases as a team with the staff of the beneficiary countries and with the technology providers, when these technologies were other than the Romanian ones. The respective investment projects totalled billions of dollars, amounts with which the oil industry contributed to the economic development of Romania between 1948 and 1989.

After 1980, the controlled economy entered a systemic crisis. Thus, despite a remarkable economic growth during the four decades, in 1989, Romania was in a marginal position in the hierarchy of European countries, between its level of development and that of the developed countries with market economy, with large gaps in what regards the main economic and social indicators.

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METHODOLOGICAL ASPECTS REGARDING THE EVALUATION OF THE FINANCIAL STABILITY OF THE BUDGET OF THE ADMINISTRATIVE UNITS

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Abstract:

The modern paradigm of territorial development, according to which the territories should strive for economic growth on their own resources, is the self-development of socio-economic systems. At the same time, one of the most important factors for the self-development of the territorial economy is the sufficiency of the budgetary resources for the public authorities for the fulfillment of the functions assigned to them.

In this respect, the improvement of the methodological instruments of a comprehensive assessment of the financial stability of the budgets of the administrative units of the Republic of Moldova is of particular scientific and practical importance, which determines the object of this scientific article. Thus, the content of the study presents the methodological aspects for a comprehensive evaluation of the financial stability of the budgets of the administrative units of the Republic of Moldova.

Keywords*: public revenues, public expenditures, state budget, budget deficit, financial stability.*

JEL Classification: *H61, H71, H83*

Introduction

Today, many indigenous and foreign scientists, as well as information and rating agencies, are involved in researching the financial stability issues of various economic entities, including administrative units, to assess investment risks, determine the solidity and solvency of these entities.

Despite such increased interest in this issue, a unified scientific approach for determining and evaluating the financial stability of the budget of administrative units has not yet been developed.

In the existing approaches of scientists for characterizing the financial and budgetary sustainability of the component entities of the Republic of Moldova, the object of the research is their budgets, which analyze the budgetary resources and evaluate the budgetary sustainability, but there is no clear distinction between the concepts of financial and budgetary stability.

Thus, in Table 1 we will present a series of approaches to the notion of budgetary stability of the administrative unit.

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Table 1

Conceptual approach to the notion of budgetary stability

Author	Definition Content
Poleak, G. [1 p. 680]	The level of stability of the territorial budget can be determined by the amount of funds necessary to ensure minimum, determinate budget expenditures, which means the funds provided for in the budget for financing constitutionally guaranteed measures for the life support of the population
Greaznova A.G. [2]	The state of the budget, in which the normal functioning of the subject of public authority is ensured, the implementation of all the powers assigned to it on the basis of full and timely financing of budgeted expenses, including repayment and servicing of internal and external debt
Karataev, S.M. [3, p. 44]	The likelihood of timely and complete coverage of the public authorities at the expense of their budget spending, provide the investment needs of the territory, as well as the repayment of debt and other liabilities and expenses on their service
Iyashvili, V.B. [4]	Adequacy of financial resources for the full implementation of all activities provided for in the budget when the actual volumes of budget revenues deviate from those provided for by the budget law
Doronina, T.V. [5, p. 47]	Current budget stability is such a movement of cash flows that will allow the population of the region to provide a decent standard of living that meets national social standards, and long-term sustainability is the most important sign of a development-oriented budget and assumes the long-term preservation of its characteristics in a balanced mode
Kankulova, M.I. [6, p. 30 - 31]	The stability of the budget system is the ability of all its elements using the mechanisms of mobilization and distribution of centralized monetary funds of the state to ensure the implementation of the declared goals without significant changes in the main parameters under the influence of negative factors
Kutsuri, G.N. [7, p. 81]	Budget stability is a system of interdependent economic relations based on the principles of profitability, flexibility, autonomy with a low level of volatility of state economic policy, which allows for the current and strategic socio-economic development of the state

Source: adapted by the author according to the sources mentioned in the table

In the above approaches, budgetary stability depends on the availability and sufficiency of resources or budgetary funds for timely and complete coverage of public expenditure by public authorities:

- for the implementation of the stated objectives, the repayment of the debt and other obligations and expenses for their service;
- to maintain a balanced budget in the future;
- to ensure the current and strategic socio-economic development of the state.

At the same time, criteria for achieving budgetary stability are not disclosed, such as the normal functioning of the subject of public authority and a decent standard of living that corresponds to national social standards, so it is not completely clear what is meant by these criteria and how they can be measured or evaluated.

In the American literature, in relation to public finances, the concept of fiscal sustainability is also used. As the foreign authors themselves have mentioned, there is no established method for determining financial stability in foreign literature [8, p. 21]. For example, A. Craidl in his study describes financial stability as follows: fiscal policy is stable if the present value of the future primary surplus is equal to the current level of debt [9, p. 27]. According to C. Burnside, the analysis of financial stability consists of the use of a simple set of tools for evaluating the government budget and its debt position, on the basis of which it is concluded that it is appropriate to apply the selected fiscal policy [10, p. 11]. LJ Kotlikoff, in an article on financial stability, notes

that if the tax burden of future generations is higher than they can bear, then fiscal policy is unbalanced and economically unstable, and the budget deficit is an indicator of long-term volatility [11].

Description of the problem

After analyzing the approaches to determining the financial stability existing in the foreign literature, we concluded that, in most of them, financial stability is defined as the ability of the government to finance current expenses, to ensure the implementation of fiscal and other policies in the absence of solvency problems, fulfilling the commitments made.

The multidimensionality of the category of "financial stability" consists, first of all, in the fact that it is closely related to other economic categories that characterize it. Among them, according to Russian scientist A.A. Nikiforova [12] should be highlighted financial security, flexibility, stability and development, but these categories do not fully reflect the essence of the financial stability of the administrative unit budget. From the position of a systematic approach, in addition to the listed features, the financial stability of the budget is also characterized by a relationship with the categories of "reliability", "strength" and "integrity", as it results from the information presented in Figure 1.

Thus, budgetary stability depends on how the revenue share of the budget is sufficient for the implementation of spending obligations, which depends directly on the rate of development and the degree of use of the potential of revenue of the territory, as budgetary income is the financial basis for the implementation of the socio-economic policy.

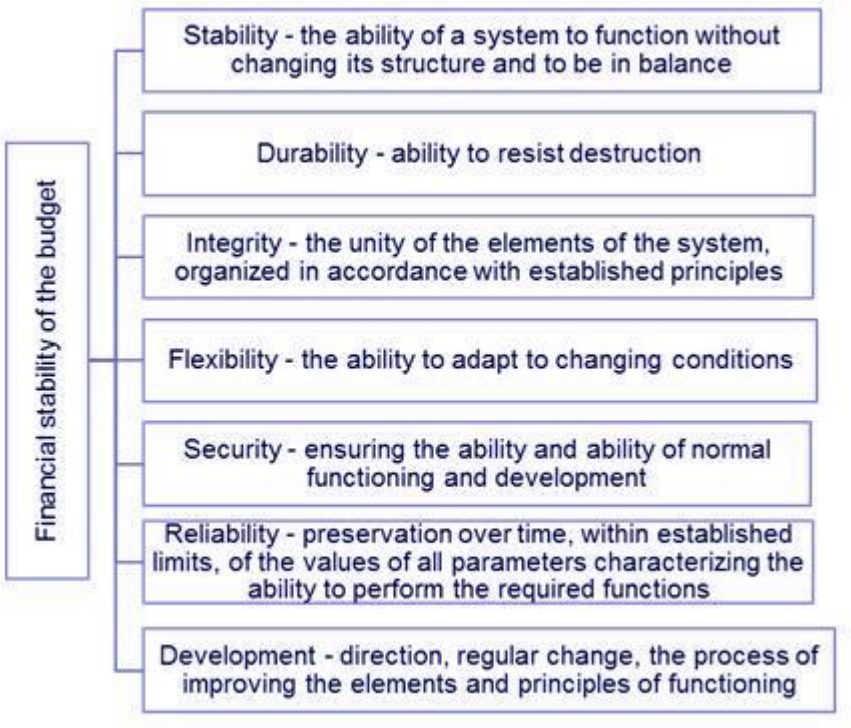
Financial stability of the budget
Stability - the ability of a system to function without changing its structure and to be in balance
Durability - ability to resist destruction
Integrity - the unity of the elements of the system, organized in accordance with established principles
Flexibility - the ability to adapt to changing conditions
Security - ensuring the ability and ability of normal functioning and development
Reliability - preservation over time, within established limits, of the values of all parameters characterizing the ability to perform the required functions
Development - direction, regular change, the process of improving the elements and principles of functioning

Figure 1. The relationship of the category "budget stability" with other economic categories

Source: elaborated by author

In the existing scientific papers, the attention of indigenous scientists is mainly focused on studying the problems of evaluating the budgetary stability of administrative units, while the concepts of financial and budgetary stability are identifyed. In this regard, an analysis of the methods for evaluating the budgetary stability of administrative units is needed, in which both calculation and heuristic methods are used.

The most used methods of analysis calculation are comparison (structural, temporal, dynamic, spatial, evaluation, basic), ordering (grouping, aggregation, balancing), economic and mathematical methods (details, chain substitutions, absolute and relative differences, correlation, regression, variation, etc.), coefficient analysis.

Methodology and data sources

In the scientific community, one of the first to resort to studying the problems of analyzing the stability of the budgets of administrative units is G. B. Poleac [1, p. 681]. The advantage of its methodology is the simplicity of the calculations, thanks to which the assessment of the state of the budgets of the administrative units is carried out objectively.

In order to evaluate the financial stability of the budgets of the administrative units, it is recommended to use the following budget indicators:

1.K_1 - the share of own revenues (tax and tax revenues, subsidies, subsidies) in the total budgetary income of the administrative unit, which is calculated according to the following formula:

$K_1 = \frac{Rown}{Rtotal} x\ 100\%$, (1)

where R_{own} - own revenues (fiscal and non-fiscal revenues, subsidies) received from the budget of the administrative unit; R_{total} - the total amount of the revenues received in the municipality's budget.

K_2 - the coefficient to cover the expenses of the administrative unit with fiscal and non-fiscal revenues received from the budget of the administrative unit, calculated according to the formula:

2. $K_2 = \frac{Rcurrent}{Exp.a.u.} x\ 100\%$, (2)

where *Exp.a.u.* - the budgetary expenses of the administrative unit; $R_{current}$ - the fiscal and non-fiscal revenues received from the budget of the administrative unit.

K_3 - the fiscal and non-fiscal revenues of the budget of the administrative unit per capita, are determined according to the formula:

$K_3 = \frac{Rcurrent}{Population}$ (3)

K_4 - the coefficient of financial independence of the budget of the administrative unit, is the ratio between the sum of the fiscal and non-fiscal revenues and the value of the budgetary transfers:

$K_4 = \frac{Rcurrent}{BT}$, (4)

where BT - budget transfers.

K_5 - the coefficient of the balanced budget of the administrative unit, which is calculated according to the formula:

$K_5 = \frac{DDeficit\ (Surplus)}{Expenditure}$ (5)

The above coefficients and indicators were chosen based on the openness and accessibility of the data in the reports on the execution of the budgets of the administrative units and the possibility of a comprehensive quantitative assessment of the financial stability of the budgets. The composition of the coefficients used to evaluate the financial stability of the budgets of administrative units is not finally formed and can be supplemented by other indicators. In this case, a re-analysis of the correlation between the indicators will be necessary to determine the feasibility of including new indicators in the system for assessing the financial stability of the budgets.

For coefficients K_1, K_2, K_3 the financial stability index of the budget is determined according to the formula:

$I_{sfb} = \frac{K_i}{K_{max}}$, (7)

where I_{sfb} - the financial stability index of the budget; K_i - the value of the coefficient for the administrative unit I; K_{max} - the maximum value of the coefficient between all administrative units.

For the K_4 and K_5 the calculation relation is influenced by the fact that the higher the values for these coefficients, the lower the financial stability of the administrative unit budget.

$I_{sfb} = 1 - \frac{K_i}{K_{max}}$, (7)

Accordingly, it is necessary to calculate an aggregate financial stability index of the budget for each administrative unit (IA_{sfb}) by summing the values of the financial stability indices of the budgets for each coefficient:

$IA_{sfb} = \sum I_{sfb} K_n$ (8) [1, p. 682].

Results obtained

Assessing the financial stability of the budget of the administrative unit is a current problem not only for the Republic of Moldova but also for other states, which requires an integrated approach in the conditions of an economy influenced by the political power that is in government. Thus, in order to ensure an increase of the financial stability of the budget of the administrative unit, it is necessary to implement a set of measures that would ensure the correlation between public and private finances, as shown by those presented in Figure 2.

ways to optimize expenses
ways to create an attractive entrepreneurial and investment climate
ways to increase fiscal and non-fiscal revenues
Directions for increasing the financial stability of the budget
ways to reduce debt

Figure 2. The main directions for increasing the financial stability of the budget of the administrative unit

Source: elaborated by author

As we know, the financial stability of the budget does not have clear boundaries for its development, so today the fundamental question is how the revenue potential of the administrative unit is realized and which directly affects their execution. A driving force that influences this potential, of course, are various factors that intervene in the formation and implementation of the financial stability of the administrative unit, presented in Figure 3.

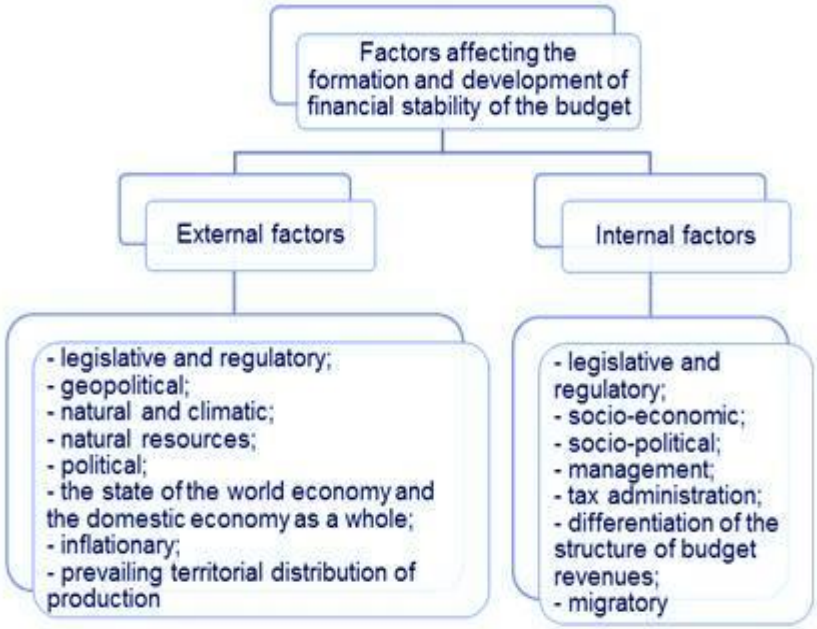
Factors affecting the formation and development of financial stability of the budget
External factors
Internal factors
- legislative and regulatory;
- geopolitical;
- natural and climatic;
- natural resources;
- political;
- the state of the world economy and the domestic economy as a whole;
- inflationary;
- prevailing territorial distribution of production
- legislative and regulatory;
- socio-economic;
- socio-political;
- management;
- tax administration;
- differentiation of the structure of budget revenues;
- migratory

Figure 3. Factors affecting the formation and development of financial stability of the budget

Source: elaborated by author

The factors listed differently affect the revenue potential of the administrative unit and it is therefore necessary to determine the coefficients mentioned for each administrative unit separately and then to calculate the aggregate financial stability index of the administrative unit budget.
In the process of executing the revenues and expenses of the budget of the administrative unit, an important role is played by the timely assessment of the fiscal and non-fiscal revenues of the budget and the prevention of the excessive expenses. The main tasks of the authorities are to prevent a deficit in the budget of the administrative unit, as well as to identify the sources to cover the deficit in case of its emergence. In this respect, the importance of evaluating the budget implementation of the administrative unit increases not at the end of the financial year, but throughout the entire budget execution process. Only the operational financial analysis increases the possibility of high quality execution of the budget of the administrative unit as the budgetary execution of the expenses and of the income flows is completed.

Conclusions

n conclusion, we would like to mention that the practical implementation by the public authorities of the administrative units of the Republic of Moldova of the measures to increase the financial stability of the budget for its low-level administrative units can become one of the effective tools for monitoring the stability. financial of the state budget. The financial balance and the stability of the budget indicate the effectiveness of the financial planning in the administrative unit. In addition, they determine the possibilities to carry out not only current financial activities by the local authorities, but also to cope with the debt burden in terms of paying the public debt, forming reserve funds and increasing the investment attractiveness of the administrative unit. In this respect, the analysis of the financial stability of the budget of the administrative unit is particularly important.

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GENERAL AND SPECIFIC FACTORS OF MANAGERIAL CREATIVITY BLOCKAGES RELATED TO THE ECONOMIC DEVELOPMENT OF ROMANIA'S NORTH-EAST REGION

Ph.D. Marilena DONCEAN[54]

Abstract:

The current research is important and highly necessary considering that certain businesses offering high quality products and services remain largely unknown on the market. Many businesses face serious threats for the future and answers can only come from novel approaches and from original and innovative solutions with a major positive impact. The intermediate findings of this study complement the rather limited research in the field and, based on theoretical and practical approaches, attempt to contribute to elucidating the modern practice mechanisms in managers' creative thinking and the related principles and values. Managers' creative thinking is essentially a complex mental activity that generates a certain product, the mental capacity of the human individual to achieve new things, in different forms, e.g. theoretical, scientific, technical, social, etc. These are necessary to uncover unfamiliar facts about reality or to develop original approaches and solutions to solve problems and express them in unique personal forms.

Keywords*: barriers, decisions, practical approach, marketing and management.*

JEL Classification: *L20, M51, O30, O31, O32*

Introduction

Human creativity, viewed through the centuries as a divine attribute, evolved in slow steps, facing obstacles and dangers, and its products were considered of divine inspiration. In the ancient world, creative geniuses were considered to be under the grace of muses that simultaneously inspired and protected. Originally, the notion of creativity was expressed by imagination, talent, inspiration, creative fantasy, which constitutes in fact psychological traits of a creative person. The year 1950 is a milestone in scientific research on creativity, with J. P. Guilford regarded as the parent of research in the field. In the 1980s research related to creativity expanded throughout the developed world. In Romania, the first work on creativity was published in 1967, authored by Alexandru Roşca, from the University of Cluj-Napoca. Research was pursued at the Universities of Bucharest, by P. N. Popescu, and Iasi, by V. Pavelcu, Gh. Doncean, V. Belousov, etc. Worldwide, there are centers for research on creativity, based mainly in the United States, Europe and Asia.

Description of the Problem

Creativity is not defined by stimulus methods alone it also deals with a range of ***barriers or bottlenecks***. Let us remember that people/researchers/professionals find it very difficult to accept "anything" that does not conform to their way of thinking, "something" they cannot imagine to be possible and implicitly tend to ridicule, to combat and to put up resistance to anything new or novel.

This phenomenon has manifested in Romania too after 1989, as there have been numerous barriers to the country's modernization and the leveraging of intellectual elites, so much so that certain creative individuals have had to go to the West. The consequences? A slow pace of technical and economic innovation, low performance in the economic and social areas, budget deficits exceeding 7% of GDP, high external debt, over 40% of the country's population below the poverty line and a 50th place in the ranking of top performing countries.

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Romanian entrepreneurs most often take the decision to "clone" certain businesses and do not make the effort to generate new business ideas. Among the surveyed managers, the answers about the strategic vision in business management were grouped as follows:

- 38% make decisions based on methods applied in the past which resulted in modest success (A);
- 26% view prudence as an essential element in change management decision-making (B);
- 19% build their decision-making on models used by managers of successful domestic businesses (C);
- 13% are concerned about innovation and modern marketing in their business as success factor for the future (D);
- 4% do not seek to develop their own ideas of innovation and marketing (E).

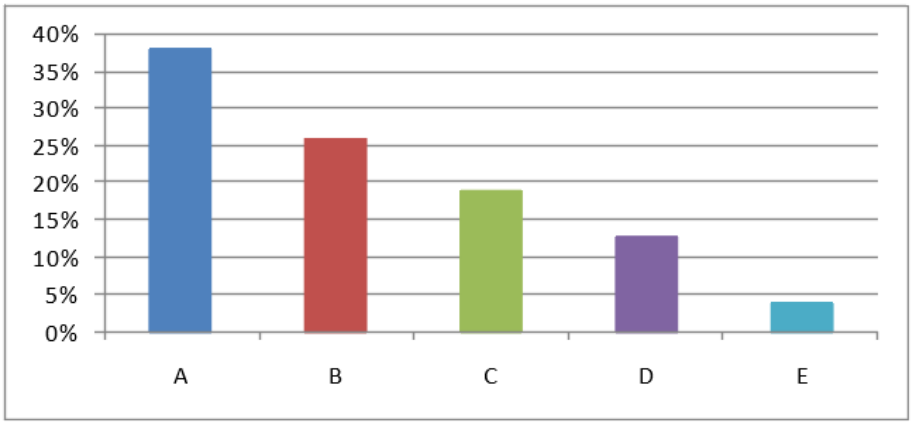

Figure 1. The strategic vision of managers in the North-East development region regarding the creative marketing management of their business

Source: data processed by the author

Direct interviews with some managers in other regions of Romania have shown that although managers in the North-East development region are smarter, few among them actually transfer business marketing creativity to the level of innovative products that add value to the company and society.

Marketing creativity in some cases transforms into barriers or obstacles, with excess sometimes leading to defocussing, a negative factor for the business. Questioned on the financial support for their business, the managers expressed different, divergent views, little knowledge of the financial mechanism, as reflected in their answers:

- 49% consider the financial support for the business as being essential;
- 22% did not track price variations in the context of the financial crisis in the EU;

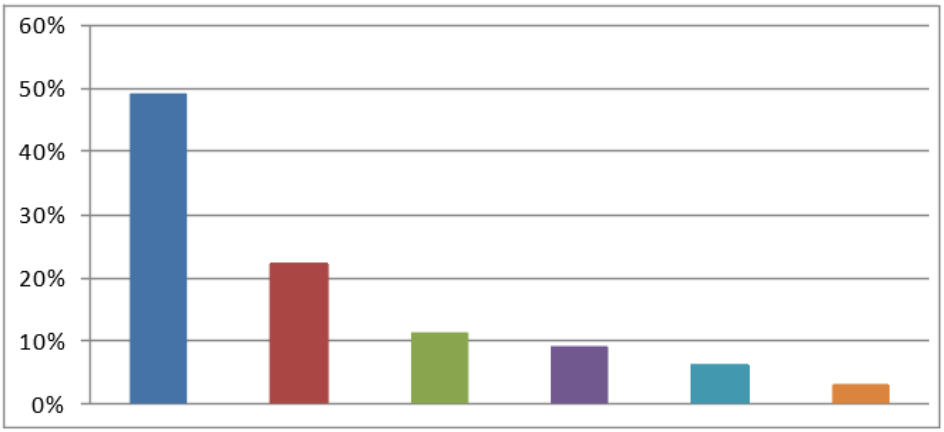

Figure 2. Managers' perceptions of the importance of financial capital

Source: data processed by the author

- 11% believe that only changes in the RON/EUR or RON/USD exchange rate could threaten the business;
- 9% also take into account marketing expenses in business assessment;
- 6% do not have (up to date) information on the financial situation of the company;
- 3% receive the information directly from the COO or CFO.

Figure 2 shows that managers in the North-East region do not opt for a "fashion trend" approach in their business. It is necessary to design a new model of marketing management that is line with the current realities of the Romanian economy and business environment, because the concepts studied are based on a stable economic environment and not on an unstable, current economic environment. The question that arises then is: are they still current?

We have discovered that in the region under research the marketing management theories conceptualized through research are not sufficiently known. This is the first finding. However, in the context of globalization, marketing management focuses on creativity and innovation, while some managers still believe in classical marketing and management.

In the literature in the field, two major trends have come to the fore:

1. Some modern marketing and management theorists consider that the ideal solution for the future is to revert to old management practices and principles that have proven their validity over time;

2. Other specialists find that continuing classic management is the cause of current problems in the business environment and opt for abandoning it.

Both research trends provide a sound argument to support their claims. In the theories of modern marketing management too there is an emphasis on the future capacity for continuous adaptation, creativity and innovation, and long-term solutions consist of rigour, discipline and risk containment.

This research highlights the practical approach of businesses in the North-East region of Romania, in relation to these two theoretical opinions. It is obviously necessary to set a proper direction for the company's development, for its strategies and change-management tactics to be implemented, because in a variable economy any error can make the difference between bankruptcy and performance. Decisions have to be made under conditions of certainty as the North-East area is among the poorest areas in Romania. For this reason, properly leveraging the human resources potential is particularly important. In this region incomes are among the lowest in the country, which makes residents more cautious, favouring savings held in banks in order to raise capital for further investment.

Analyzing creation and innovation at the level of the eight development regions of Romania, we find that the North-East region ranks in the middle range, with a declining trend, as results from the research carried out:

Table 1

North-East region ranking in terms of innovation factors

No.	Factors	Points	Rank
1	Extent of innovation	37.19	2
2	Innovation management potential	53.42	2
3	Knowledge generation potential	12.46	4
4	Capacity for innovation and integration in a relational system	57.02	2
5	Performance of innovation activities	31.43	7
6	Intellectual property	7.89	6
	Average points	33.24	4

Source: data processed by the author

Table 2

Comparative table of innovation factors for the eight economic regions of Romania

Development region	Overall rank	Innovation management potential	Knowledge generation potential	Capacity for innovation and integration in a relational system	Performance of innovation activities	Intellectual property
Bucureşti Ilfov	1	1	1	1	1	1
Nord-Est	2	2	4	2	7	6
Centru	3	7	8	3	3	2
Sud	4	5	2	5	6	3
Sud -Est	5	6	7	4	2	7
Sud -Vest	6	3	6	8	4	8
Nord-Vest	7	4	3	7	8	4
Vest	8	8	5	6	5	5

Source: data processed by the author

The data presented in the table above indicates that:

- The North-East region ranks sixth when analyzing intellectual property, even though it is the second university centre in the country and has a National Invention Institute and places seventh in terms of the performance of innovation activities;
- Research and development bodies did not launch new products, technologies, patents, models, etc. on the market.

The survey conducted in businesses in the North-East region also sought to gather information on the importance of factors that block innovation activity, innovative projects or influence the decision to not innovate. The following four groups of factors emerge:

1. *Cost factors:*
- Lack of funds in the company;
- Lack of funding from sources outside the company;
- High innovation costs.

2. *Factors linked to knowledge accumulation:*
- Lack of qualified staff;
- Lack of information about technology;
- Lack of information on demand in specific markets;
- Difficulties in identifying partners for co-operation for innovation;

3. *Market factors:*
- Market dominance by established firms;
- Low and fluctuating demand for innovative goods and services.

4. *Reasons not to innovate:*
- Needs have been addressed by earlier innovations;
- There are no calls to innovate a product or service.

Among the businesses surveyed, 13% searched for innovation co-operation partners and 14% faced a fluctuating demand for innovative goods and services. The study conducted on a number of North-East region companies that have introduced change through creativity and innovation. In our survey businesses reported that they had faced the following types of blocks to creativity in the implementation phase:

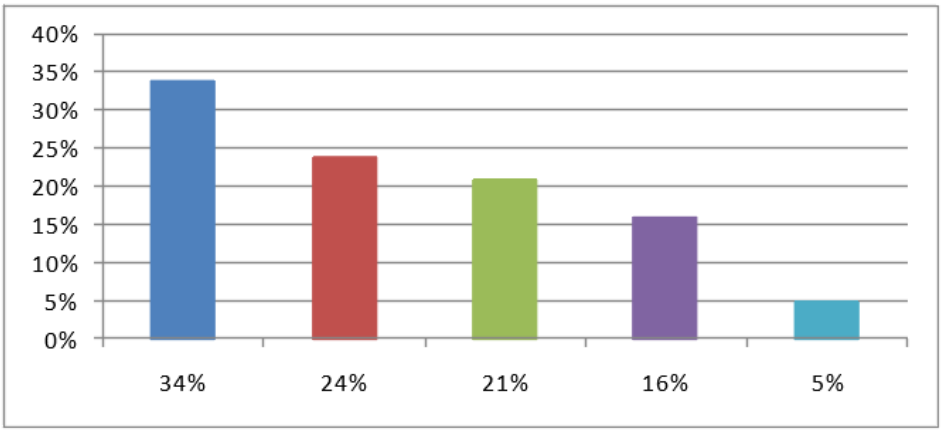

Figure 3

Source: data processed by the author

- 5% - had difficulties in pinpointing a problem in the current economic context;
- 16% - tended to concentrate excessively on the problem;
- 21% - do not distinguish cause from effect;
- 24% - argue that emotional blocks are the most important;
- 34% - are fearful of hierarchical leaders.

The answers faithfully reflect the reality of the Romanian economy and society. The key to success is that, regardless of the level of responsibility we have, we must quickly overcome the barriers to creativity. The management of such blocks must be based on intuitive methods and techniques to overcome the resistance to change. There are cases where, due to excessive bureaucracy and high taxes, many inventions were not officially registered, others were delayed, and most were registered overseas due to lack of funds within and outside companies to apply new technologies. This is also one of the reasons why in 2016 Romania's competitiveness index was 3.09 and its technological index 4.05 (compared to 5.77 for Switzerland), ranking it 76 and 78 respectively out of 134 countries. The cause for the blockages to creativity also lies in the insufficient training and professional skills offered by the Romanian universities. In this respect in 2016 Romania's higher education indicator was only 4.14, ranking it 54th, compared to Finland's 6.01. Universities do not prepare top intellectual elites able to innovate the Romanian society at all levels.

Managers need innovative and quick solutions to eliminate the creative bottlenecks in the Romanian society, which are perceived as an evolutionary process, the problems to be solved having a dynamic character, with rapidly shifting developments. As part of the study, managers who run high-performance businesses, especially those in organic agro-food production, report the following factors that add to creativity blockages: changes are deployed in small steps, taxation reduces firms' revenue, and loans are becoming too expensive. All the companies reviewed have managerial teams with university degrees, who continuously learn in formal settings and are knowledgeable of modern economic theory and, respectively, of marketing techniques and methods. The formula for the economy based on innovation and creativity can be written as follows:

innovation + market economy + democratic system = general prosperity + global cooperation

Failure to perform and to innovate leads to poverty and poverty triggers social conflicts. Specialist research has shown that countries with a per capita GDP of less than $250 have a 15% probability of experiencing violence and unpredictable outcomes. This phenomenon also occurred in Romania, when severe measures were taken to cut the income of citizens. However, survival on the market requires rapid and creative adaptability. A study of 161 businesses in the North-East Region on how managers perceive innovation as the main element of creativity produced the following answers:

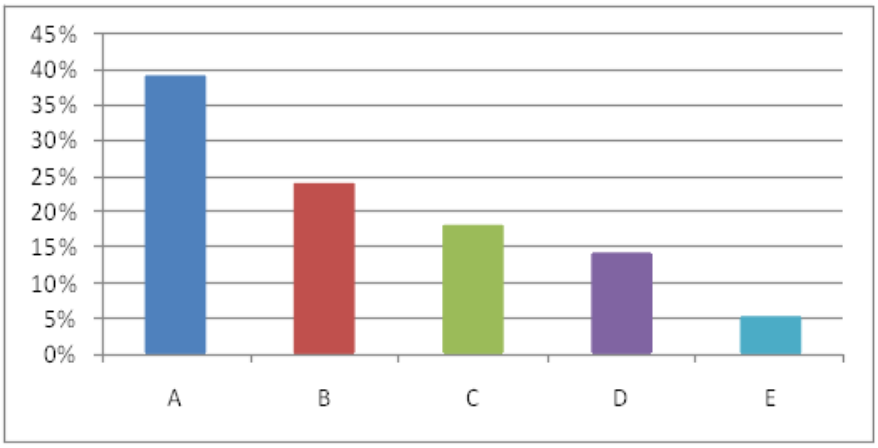

Figure 4

Source: data processed by the author

- 39% view invention as the central element of creativity (A);
- 24% view innovation to be important, though it requires important support resources (B);
- 18% view innovation as a factor for the company's survival in the future (C);
- 14% believe that innovation is the responsibility of intellectual elites (D);
- 5% believe that performance is more important than innovation at company level (E).

Methodology and Data

The following methods were used as part of the research: quantitative and qualitative research methods, including bibliographic documentation, induction, deduction, systemic method, statistical methods, method of comparison, defining the scope of the problem, correlation, evaluation, etc.

The article is based on systemic, complex and problem-focused approaches and seeks to examine the mechanisms of managers' creative thinking values.

This study of great topicality and originality can be considered a concrete support for researchers, academics and managers in what is an interesting field of economy

Results

There is a lack of knowledge among managers of the role that innovation plays in remodeling the future, a perception that can be easily assimilated as a creativity block.

These issues help to justify the ever smaller number of research papers with a major impact in the world. From the literature in the field, but also from field studies, the following classification of obstacles or barriers to creativity and innovation can be summarized:

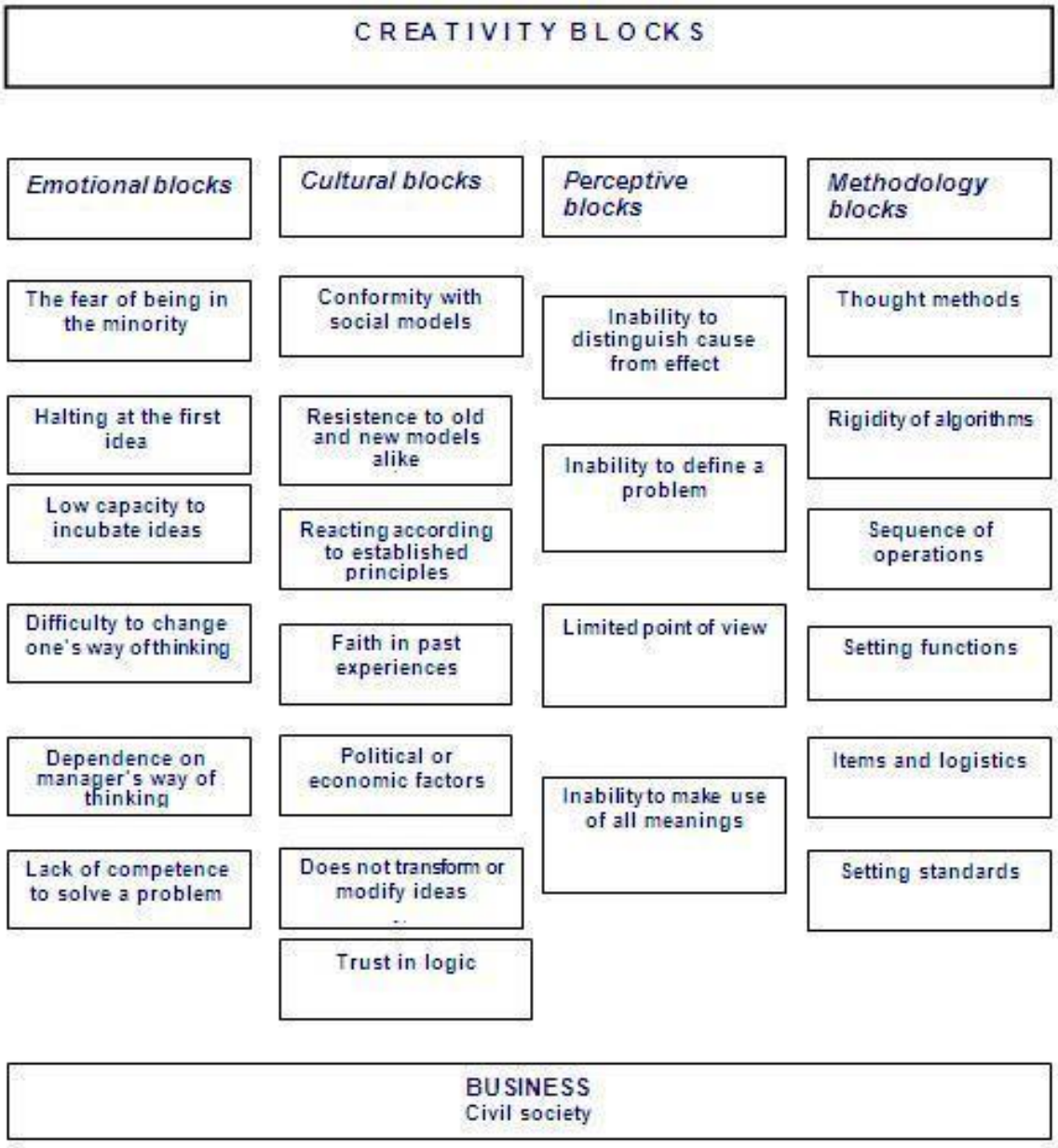
CREATIVITY BLOCKS
Emotional blocks
Cultural blocks
Perceptive blocks
Methodology blocks
The fear of being in the minority
Halting at the first idea
Low capacity to incubate ideas
Difficulty to change one's way ofthinking
Dependence on manager's way of thinking
Lack of competence to solve a problem
Conformity with social models
Resistence to old and new models alike
Reacting according to established principles
Faith in past experiences
Political or economic factors
Does not transform or modify ideas
Trust in logic
Inability to distinguish cause from effect
Inability to define a problem
Limited point of view
Inability to make use of all meanings
Thought methods
Rigidity of algorithms
Sequence of operations
Setting functions
Items and logistics
Setting standards
BUSINESS
Civil society

Figure 5: Barriers or obstacles to creativity and innovation

Source: data processed by the author

1. Cultural barriers / obstacles are linked to certain strict rules and directions to be followed:

- Managers' reliance, almost exclusively, on reason, logical methods and experience to the detriment of inspiration;
- The authority at the top of the decision-making pyramid that exerts the most damaging influence on the individual's creativity (there are no impact studies at company level);
- Discouraging the creators. Valuable ideas are being vigorously opposed by well-organized interest groups and sometimes by decisions of the company's hierarchy;
- The fear of the creator to not be up to the standard required to deal with an issue, the conservation instinct and the social position acquired within the firm.

2. Cognitive blockages relate to the field of knowledge and perception, i.e. a difficulty to identify the main problem, to think divergently, flexibly and to be open to any possible solution. The tendency to restrict potential solutions and to stick to a single option is a barrier to creativity in a company.

3. Obstacles related to the personality of the decision-maker are motivational, mental, attitudinal and emotional. Intrinsic motivation is the engine of creativity. Low motivation, broadly present in Romania, is particularly detrimental to creativity. At the same time, according to the

principle of duality, excessive motivation (great material gains, scientific titles, important positions) are detrimental to the creative act, as optimal motivation lies between the two extremes. The lack of the will to solve a problem, the momentary or the strategic interest, exaggerated protectionism or strong conformism are all obstacles related to the attitude, mentality and behaviour of the creator.

4. The environmental barriers come directly from the external environment of the creator and derive from the creator's lack of cooperation with his/her team, the autocratic behaviour of the decision-maker, the lack of sufficient financial means to solve the problem or the undermining of the creator's personality.

5. Socio-cultural barriers include customs, beliefs, taboos, prohibitions, discomfort and potential dangers. Some decision-makers are also inclined to sometimes consider that the creative employee wastes time or simply plays with inspiration.

Research has shown that 13% of the great creators were considered "mad". But daydreaming or visions must not be obstructed by the manager, since disregard for the creator's personality damages creation. The creator uses divergent thinking, which is why brainstorming is one of the methods used to boost creativity. Some managers, more rigid in behaviour and thinking, do not condone humour in the act of creation. Yet by denying such behaviour, they block the positive and free side of creation. Through humour, the creative person accumulates cognitive tension, then leaves this framework and moves into another frame favourable for creation and finding solutions. Creative people are loaded with positive energy; they are cheerful and should not be inhibited.

Sometimes the cultural environment in which the creative person works influences their behaviour: it may be a cultural environment oriented towards traditionalism or an environment focused on rapid and radical change. The cultures of rich and performing countries focus on change, which also favours creativity: e.g. the US, England, France, China, India, Brazil, Argentina, Japan. In Romania, traditionalism is very strong and breeds resistance to change. For this reason, the creator will feel restricted in a society that does not adhere to certain values and is confined to conservatism. Furthermore, validating any creation in Romania is cumbersome, costly, bureaucratic, marred by petty interests. As a consequence, the official recognition of the creator's "product / service" is delayed and is not financially supported.

Pauling Linus, the two-time Nobel Prize winner, asked about how he achieved this performance: "It's simple. The way to get good ideas is to get lots of ideas and throw the bad ones away." A creator needs such a great number of ideas. Gold cannot be found if one does not look for it and uncut diamonds are of no value and do not shine.

Indeed creators must be identified, supported, motivated, officially recognized, and their creations must be put into practice, while barriers to creativity and innovation must be removed. Any other approach leads to failure. Yet the issue of creativity and innovation can also be addressed by analysing its causes using a chart. Using figure 8 helps to highlight the cause-effect links, allows the analysis of each aspect of a given situation, and helps to identify the elements to modify or neutralize them.

A. Osborn argued that, when compared to the solutions decided on the spot, postponed judgment brings, in the case of group-derived solutions, a 70% benefit compared to the conventional individual idea and up to 90% as opposed to an individual decision. He also contended that stating many ideas quickly and postponing their analysis for a while generates a multitude of novel and original hypotheses, the most valuable of which emerge in the final stages of mental effort.

Conclusions

No progress can be achieved without creativity. The latter requires preparation, stimulation and encouragement and very intense work, specific to each creator. The road to performance first involves eliminating barriers. The challenges of the future are so important and threatening to the very existence of the human species itself, that only through original ideas and creation, can we find the appropriate answers.

These are the reasons why creators need to be sought, nurtured, supported, motivated, recognized, so that we can quickly find our place among the great civilized nations of the world. Creation will bring profit and recognition through value, welfare and national wealth. Creativity, regardless of the field in which it manifests itself, must be validated.

Creativity generally focuses on the need for a new product or service of high social value. For this reason, society needs to invest in education in order to train people for fields that require high intelligence: in science IQ > 120; in the technical and business fields IQ > 110; in artistic creation

IQ > 100.Creativity has always been and will continue to be a defining social necessity for progress characterized by the need to create a new and original product and social value.

Future Directions

Creators have divergent thinking, accept more solutions, yet will choose one in response to a social necessity, providing practical applications and bringing high added value. There are many methods and techniques to foster creativity, but also so many obstacles that hinder a company's marketing creativity. *The focus on development is equally necessary for the individual, for businesses and for society at large*. Each stakeholder must be prepared for competition by novelty, creativity being a social necessity that ensures renewal, prosperity and progress. We have great creative potential: our minds, which we must use more intensely, as a primary source of creation and progress; natural resources; developed higher education. However, we must change our attitude in addressing certain issues and get to work seriously, starting from the main economic actors: people, businesses and the society.

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ANALYSIS OF HUMAN RESOURCE MOTIVATION

PhD. Dumitru Raluca-Ana-Maria[55]

Abstract:
The approach of management based on people's motivation is specific to companies with a tradition in the efficient management of human resources. Effective managers have long introduced positive strategies for employee incentives to organizations. A satisfied, motivated employee at work will have great performance. The power of the personal example has an essential role in motivating employees.
The new vision in the field of human resources is that the managers have subordinated automotive work teams that can implement the established goals. In this case, the managers have the support role by advising team members and ensuring the team's interface with the outside.

Key words: *human resources, motivation, management, small and medium-sized enterprises (SMEs), organizational performance.*

JEL Classification: *L1, L25, L32, M54, O15, O32, P17.*

Introduction

Many companies are currently reviewing how they look at the human resources they have. From the consideration of people as simple means of achieving the goals (profit, turnover, market share, etc.), managers are increasingly looking at employees as representing the company itself. This is very noticeable in service companies.

The two questions to which more and more managers in Romanian companies are starting to meditate are: "Why do we need to motivate employees?" or "Why should we be concerned about the level of employee satisfaction?". State or private companies, large or small, from different fields of activity, all companies have a common denominator: the human resource. The success of the company depends on how the human resource develops. The results of an organizational improvement project that looks at people are much harder than those of a project that aims at refurbishing or reducing internal costs, but each of these last two processes shares the people who create them and translate them into reality.

Of all the human resources processes that can be developed within companies, the motivation process occupies a central place, because to one degree or another, everything else derives from its proper functioning. Being constantly mindful how you can motivate people, how you can increase employee performance and satisfaction, is to restructure all processes within the company, from making job descriptions to establishing fair pay systems or career plans.

Moreover, the development of a company depends to a large extent on the way employees develop or, in other words, on the efforts that managers make to develop their employees. Without a clear vision of what the company wants to do and without adequate motivation of people to turn that vision into reality, a company can not succeed.

The new vision in the field of human resources is that managers have subordinated to self-empowered work teams that can, with little supervision, implement the established goals. In this situation, managers have the role of support by advising team members and ensuring the team's interface with the outside. Otherwise, team members do everything from setting goals to reach them. From this perspective, the employee motivation is nothing more than a process by which we ensure that all employees work in the direction of the vision set and in order to achieve the objectives.

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As with other concepts used in contemporary management, the term “motivation” is not easily defined, the proof being given by the multitude of theories that concern the motivation process from different but complementary perspectives. We have not yet come to a unitary model through which all aspects of this process can be explained. Little steps are being taken in this direction, especially from “pragmatists” who prefer to talk about how we motivate people rather than what motivation is.

In terms of motivation, virtually every person has in itself the “motor” that causes it to make efforts to carry out a certain action. The role of managers is not to “push” employees, but to get them to “start up” their own “internal” engine so that their satisfaction and performance are constantly growing. The role of a manager is to identify and use the factors that lead employees to strive to achieve their goals.

The success or failure of an organization depends on how its employees work. Her managers need to be aware that they can no longer use authority and coercion for employees to carry out their duties. Managers need to know especially how to keep their quality employees in the company. That is why the word that designates the solution applicable in this new context is engagement. Managers must motivate their employees by instilling commitment and desire for action and encouraging their creativity. Managers should benefit from the experience, energy and skills of the human resource.[56]

Motivation of staff is one of the most important issues faced by managers at all levels and from any type of organization. Unfortunately, as in other areas of managerial skills, this area is influenced by a series of “myths” and preconceptions that negatively influence managers' performance and, in general, organizational performance.

Determining employee motivation is not a simple thing. In most cases, we can not find out what motivates a person unless we conduct a poll. But a manager is in a position to influence the motivation of others, so it is important to understand the various factors that motivate people so that we can exert their influence on them with skill and wisdom.

The theories of human needs provide a detailed look at what motivation means. According to Maslow, some domestic needs are closer to the basis of a personal hierarchy than others, and people are looking to meet higher needs at the time they meet basic needs. Therefore, managers must provide pathways to self-fulfillment. Otherwise, their employees will remain unmotivated.

Motivation - Efficiency - Performance Relationship

Effectiveness of motivation

Motivations differ a lot from each other in terms of their effect on the outcome of the work. The result of the work is of two types: objective and subjective.

The objective result is the performance (number of products produced) and productive efficiency.

The subjective result consists of the affective state generated by the work activity, the objective results for the one who has made the effort and that generates the state of satisfaction or dissatisfaction.

Efficiency of work

Under certain conditions and within certain limits, any motivation can be used effectively. Daily practical observations and systematic research have led to two conclusions when the other conditions are equal:

- intrinsic motivation is more efficient than extrinsic (MI> ME);

- positive extrinsic motivation is more effective than negative extrinsic motivation (MEP> MEN).

Under all circumstances, extrinsic motivation has some disadvantages, such as:

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[56] *Radu E., Tigu G., State O., Tuclea C., Human Resource Management, ASE Publishing House, 2000, p.13*

- Introduce negative side effects causing defensive, counterproductive behaviors (eg low performance, lack of initiative);

- suffers wear over time and therefore needs to be continually increasing; this implies performance in the short term and more in quantitative terms, negative extrinsic motivation is poorly productive and should therefore be avoided by resorting to it only in extreme cases.

Human Effectiveness of Motivation (Work Satisfaction)

Man's satisfaction at work is the subjective reflex of work organization. Satisfaction is the positive affective state of satisfaction of the subject that is manifested in achieving success or as a result of fulfilling a need, reaching the goal, increasing the qualitative performance of its actions.

For a long time it has been thought that satisfaction and performance in work are two divergent aspects or, in other words, that an increase in dissatisfaction is the price paid for an increase in labor efficiency.

Work is necessary and must be done through the sense of duty or the need to ensure our daily living, although in itself it is an effort that generates dissatisfaction, frustration. Such a philosophy of work and the nature of man if not entirely, at least in part, is false. Work may be an external obligation, but it can also be a source of deep satisfaction.

Satisfaction is generated by the purpose of the work that materializes in the social utility of work. The concept of work-satisfaction divergence has been fought over the last 50-60 years. Research shows that the two aspects are not only divergent, but there is a correlation between them in principle with an average value of 0,14.

Satisfaction, as a source of work performance, depends on:

- *the complexity of work:* the more complex the work requires a high level of qualification, the more the satisfaction influences the performance.

- *the type of result sought:* satisfaction affects performance in a certain way when pursuing a quantitative result and otherwise when pursuing a qualitative result.

- *the level of personal development of the individual:* the higher the level of training and the general culture, the more the satisfaction affects the performance. In fact, a higher level of culture means a higher level of knowledge about the usefulness of the work done.

Satisfaction-performance relationship is not a direct one, but a complex one. Regarding the degree of influence between the two, it has been found that higher performance influences the satisfaction.

The motivation functions are:

- the function of internal activation and signaling of a physical and psychological imbalance is specific to needs that have a distinct dynamism starting with an internal, continuous alert, with a growing agitation, finishing by satisfying them.

- the mobilization function (trigger factor) of the actual action;

- a self-regulating behavior that prints an active and selective character.

The power to change behavior belongs to the person whose behavior is trying to change his leadership; motivation is a process that takes place within a person. The problem with the manager is to find a strategy that comes in contact with the employee's inner state, causing him to be motivated, to act under the impulse of his own feelings.

Managers need to understand motivation strategies, how they succeed or fail. Human Needs Theories provide a detailed insight into what motivation means. Managers must provide pathways to self-fulfillment, or else their employees will remain unmotivated.

There are two main types of strategies through which a manager can try to influence the behavior of others: *direct influence* (strategies that represent the direct interaction between managers and those they want to influence) and *situational adjustments* (those strategies designed to modify the nature of the situation in which they work one person, starting from the idea that changed situations will influence internal motivations).

High motivation will not lead to increased performance if employees lack basic skills and abilities, do not understand job descriptions, or encounter unavoidable obstacles over which they have no control. Contemporary managerial techniques, such as total quality management, simply do not work if employees have physical, arithmetical or technical skills deficiencies[57].

The approach of management based on people's motivation is specific to companies with a tradition in the efficient management of human resources. Effective managers have long introduced positive strategies for employee incentives to organizations. A satisfied, motivated employee at work will have great performance. The experience of the years has taught these managers that only by properly analyzing and treating the needs of the employees can the proposed objectives be achieved. The manager needs to know exactly who the beneficiary is, as he is, and know how to "act" his behavior in order for the "incentive" to be appreciated correctly.

The main elements that activate the work behavior are human needs. The need is a state of internal imbalance that generates a state of instability of the individual. This tension stimulates the effort to restore balance.

Particularities of the training function in SMEs

Paradoxically, training is concurrently intense, less sophisticated and very effective. As with previous management functions, the entrepreneur manager puts a strong impression on the exercise of training processes. The way the entrepreneur works and behaves has a decisive influence on the degree of motivation and involvement of the SME components. The power of the personal example has an essential role in motivating employees. The strong individual motivation that has led him to take on the appreciable risks to entrepreneurs, the intense efforts involved in setting up and operating a firm, and the prospect of making a substantial gain, makes the entrepreneur a permanent mobilize for effort, quality and performance within the organization.

Although there are rarely specific motivation elements - except for salary - motivation of the employee is intense due to the permanence of the entrepreneurial manager in the company and the personal example. Familiar micro-enterprises with intense motivation often contribute to the existence of family members, strongly attached to the firm and motivated to achieve effective results.

All these elements make it possible to use many elements of moral and spiritual motivation in SMEs, such as: praise, direct discussions between the entrepreneur and employees, flexibility in the employees' work schedule, frequent consultation of the staff on how to solve problems etc.

The main *tendencies* that appear in the exercise of overturning in small and medium-sized firms are:

- weighted diversification of means and motivation modalities as a result of increasing the level of information and managerial training of entrepreneurs;

- diminishing to a certain extent the weight of informal and moral-spiritual elements in motivating employees due to changes in the system of values and behaviors in society, in the nature of human relations; in this context there is a certain "cooling", a decrease in the role of affectivity in group relations, coupled with the rise of the elements of rationality, of individual material and professional interest.

- increasing the motivation of employees, in particular, of the stakeholders in general, towards innovation and performance within the firm, which are becoming more and more survival conditions even in traditional craft micro-shops.

These tendencies seek to maintain a strong motivation in small firms, generating efforts over the media of society and playing a major role in their survival and development, under the conditions of today's competition.

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[57] *Jones G., Organizational Behavior, Economic Publishing House, Bucharest, 1996, p.150*

Motivational principles in SMEs

The table below provides a parallel between the motivational principles and the position of SMEs in relation to the 10 principles.

The parallel between the principles of motivation and the specificity of SMEs

Nr. crt.	Principle	Purpose	Putting into practice	Principles in SMEs	
				Specificity	Comment
1.	Scope of coverage	Includes all aspects of HRM	HRM must be organized, not left to local ad-hoc decisions	All MRU is done by the entrepreneur / small team of heads	The tendency towards the extreme: understanding and good or totally ineffective.
2.	Coherence	Activities related to HRM form a coherent whole	A clear relationship between performance / reward and business needs	Dependent on the entrepreneur's personality	It can be dangerous and subjective.
3.	Control	Ensures consistency of performance with business objectives	Participatory management / delegating the way an objective is achieved	Often completely centralized	It can be dangerous and subjective.
4.	Communication	Objectives understood and accepted by all employees; open culture without barriers	Clear, simple and justified strategies; cascading process with feed-back to the top	Very different; objectives can be a mystery for the human resource	Depending on the owner; often an open culture with direct communication
5.	Credibility	The staff trusts the top management and believes in its strategy	Top managers are sincere, honest and consistent	Very variable, employees tend towards a firm opinion of the owner	The owner's personality is visible to everyone
6.	Dedication	Employees motivated to achieve the organization's goals	Top managers are devoted to their staff	It can be interesting and challenging for the right type of employee	The people who "bind" the entrepreneur remain
7.	Change	Continuous progress and essential development for survival	Flexible people and work systems; the culture of innovation; developing skills	It varies between stationary and business growth	Change as a reaction rather than as a strategic option

8.	Competence	Competent organization to achieve its objectives - dependence on individual skills	Resource Strategies, Selection Techniques and Human Resources System implemented	Dependent on the skills and knowledge of the entrepreneur and a core of employees	Often random; unsystematic and restricted development to a few elected
9.	Creativity	The competitive advantage derived from unique strategies	System to encourage and reward employees' ideas	Most SMEs copy their competition; few exceptions are meant for success	Creative entrepreneurs usually use their own ideas
10.	Cost effectiveness	Competitive systems, fair rewards and promotion systems	Top managers are redeployed on an equivalent basis to staff	Often it takes place on a single note: few employees and low salaries	Most entrepreneurs do not use the same reward system as for employees

Source: Adapted by Price A., *Human Resources Management in a Business Context*, Second Edition, Thomson, 2004, p.79, 219

Employee motivation in SMEs

Employee motivation in SMEs is intense, less sophisticated and very effective. The entrepreneur-manager has a strong footprint on employee motivation. The power of the personal example has an essential role in motivating the company's employees.

The way the entrepreneur works and behaves has a decisive influence on the degree of motivation and involvement of the company's employees. Its strong individual motivation, which has led it to take significant risks for entrepreneurs, the intense efforts involved in creating and putting into operation a company, and the prospect of winning substantially make the entrepreneur a permanent mobilize for effort, quality and performance in within the organization[58].

The elementary mechanism of motivation can be explained as follows: an employee has a need (or more), and management uses incentives that promise to meet those needs. Employee responds to positive behavior, boosting performance, employer satisfies the need, and the organization improves productivity and efficiency.

The motivational process in SMEs

Managers have different ways to motivate members of the organization[59]. Each way aims to meet the needs of subordinates to respond by means of appropriate behavior for the organization. Among these, I mention: managerial communication, job design, monetary incentives and non-monetary incentives[60].

The basic motivation mode used by managers is simply that of a *good communication* with the members of the organization.

The second way managers can use to motivate members of the organization is **to design posts** that the members of the organization will handle. There has long been a concern to simplify and specialization the posts in order to increase the work productivity. The negative result of this

[58] *Nicolescu O., Management of Small and Medium Enterprises, Economic Publishing House, 2001, p.329-330*
[59] *Certo C.S., Modern Management, Teora Publishing House, Bucharest, 2002, p.475-485*
[60] *Megginson S., Megginson T., Successful Small Business Management, Fifth Edition, Irwin, 1988, p.317*

concern is routine at work. The first major attempt to overcome the routine in the workplace was **the rotation of posts** - the shift of employees from one post to another, avoiding that the employee had only one simple and specialized post in the long run. Another strategy designed to overcome the routine of providing simple and specialized activities is **expanding the job** or increasing the number of operations a person needs to take to get more satisfaction from work. **The flexible program** is another more recent designing strategy. The tradition of a fixed program of eight hours a day has begun to change.

Another way that many companies use is **monetary incentives**. Many large firms operate with employee ownership plans as a form of motivation; managers are usually offered premiums in the form of shares as the incentive to think as a business owner. Other forms of monetary incentives are the first ones or the correct division of quotas from the obtained gain.

Also, a firm can maintain employees' commitment and motivation through **non-monetary means** such as the existence of promotional policies inside the firm or other firms emphasize quality based on the theory that most employees are unhappy when they know their work is reflected in unsatisfactory products.

The foundation of the training function, motivation finds in small and medium-sized enterprises a more feasible framework in comparison with large firms. In small and medium-sized firms, the rewards received by employees reflect more accurately the efforts and results they have achieved in their work.

Conclusions

Managers must offer paths to self-fulfillment. Otherwise, their employees will remain unmotivated. Although there are rarely specific motivation elements, with the exception of salary, motivation of the employee is very intense due to the permanence of the entrepreneurial manager and the personal example.

The approach of management based on people's motivation is specific to companies with a tradition in the efficient management of human resources. Effective managers have long introduced positive strategies for employee incentives to organizations. A satisfied, motivated employee at work will have great performance. The power of the personal example has an essential role in motivating employees.

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THE EVOLUTION OF POPULATION AGING IN ROMANIA

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Abstract:

The paper highlights the demographic factors which determine population aging, population development in Romania as well as the consequences of population aging. Circumstantial fertility index, mortality rate and increase of life expectancy are some determinants of population aging which are used in this paper. Information concerning young population, working population, and the elderly as well as the report of economic and demographic dependency are used in the context of evolution of population. Eventually, the economic, social, medico-sanitary, medico-social, psychosocial and sociocultural consequences are analysed. As in most European countries, Romania also faces a number of complex economic and social consequences of population aging, which is affected by a lower fertility rate and an increased mortality rate.

Keywords*: demographic, population aging, young population*

JEL classification: *O15, O43, R11*

Introduction

As it has happened in most the European countries, demographic aging has become increasingly visible in Romania since the year 2000; its consequences are economic, social and in other areas as well: medical-sanitary and medical-social or psychosocial and psychocultural.

Since 2000 the result of the aging process became more visible when the elderly outnumbered the young population; since 2012 it was easily perceivable when the share of the elderly (65 and above) of 16.1% exceeded the ratio of the youngsters (0 – 14 years) of 15.8% according to scientific assessments.

One of the causes is that nowadays the fertility rate is influenced by a number of factors related to culture, state policy on demography, religion and other factors with specific manifestation in each country.

An important aspect to be considered is that a decrease of the fertility rate leads to the decrease of future generations able to enter the labour market and bring an important contribution to national insurance and health insurance for the retired population. This could have an important effect on the prosperity of the elderly, especially in the developing countries, which cannot provide enough support for this category of population.

A simplistic approach concerning the modification of the structure by large age groups, in particular increasing the share of the population aged 65 and above, generates social and political pressure relating to the altered allocation of resources in society, and can generate conflicts between generations.

A diminished potential support ratio[62] or an increased demographic dependency rate show a major pressure manifested by the existence of a growing number of beneficiaries of the public pension and health systems compared to the decreasing number of taxpayers. Therefore, the working population, which is declining, will be charged with an increasingly difficult mission by paying increased taxes and contributions so as to provide a constant and sufficient income for the retried.

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[61] *NIER, "C.C. Kiritescu", Romanian Academy, email:floring14@yahoo.com*

[62] *The potential support ratio represents the number of persons between the 15 and 64, as a percentage of those aged 65 and over, whereas the dependency ratio represents the number of persons aged 65 and over, as a percentage of those between 15 and 64.*

The reduction in fertility rates in developed countries was based on a number of economic and social factors which must be emphasized:

- diminished number of traditional households, which generate a high fertility rate, useful for both productive activity and for ensuring the security of the elderly;

- modernization of women by detachment from old customs, access to all levels of education;

- increased attention of parents towards children' upbringing and education, which require more time and higher expenses;

- relatively more spare time, more varied possibilities of spending it, but also the existence of individual or collective means of transport, high-tech equipment (TV, computer, telephony, etc.) and the families' desire to have access to these facilities which incur considerable costs;

- promoting social insurance, in particular pension systems (public and private) but also some social care institutions which have diminished the children's role in supporting parents at old age.

An element to be considered is the fact that European population faces the emergence of a new age group called by some specialists the "fourth age", namely those aged 80 and above, with an increasing ratio and in continuous growth.

Such changes must be taken into account because they involve structural changes in society at the economic, infrastructure, health and social care levels related to this new age group.

However, there is no infrastructure for social assistance, which is often required by the new age group of 80 and over.

These aspects are quite poorly understood in today's society and the implications can be important, especially on the background of poor preparation of society and economies to support such efforts.

The new group of 80 and over is also growing in Romania and has major implications in the time horizon 2060.

These changes in the structure by large age groups have a major influence on various processes, especially economic, social and political as well.

Thus, as population ages, a number of benefits such as pensions, medical care or supporting the elderly require to ensure them for longer periods.

1. Aging of Romania's population

There are demographic changes in Romania with medium and long term effects determined by the worsening structure of the three components of population dynamics: birth, mortality and external migration.

The analysis of the last three (published) censuses of population of Romania shows that the population of Romania was of 22,810,035 inhabitants in 1992, out of which 11,213,763 men representing 49.2% and 11,569,272 women representing 50.8%; the population was 21,680,974 in 2002, respectively 10,568,741 men representing 48.7% and 11,112,233 women representing 51.3%; a decrease of the population by about 1.1 million people is visible.

The population registered in 2011 was of 20,121,641 persons out of which 9,788,577 men representing 48.6% and 10,333,064 women representing 51.4%.

The data show that the population decreased in 2002 by about 1.6 million people compared to the 1992 census. Compared to 1992, the population decreased in 2011 by about 2.7 million (*Table 1 - Total population, by sex and residence, at the censuses of 1992, 2002, 2011*)

Table 1:

Total population, by sex and by residence, at the censuses of 1992, 2002, 2011

Years	Indicators	Total			Urban			Rural		
		Total	Male	Female	Total	Male	Female	Total	Male	Female
1992	Population - total	22,810,035	11,213,763	11,596272	12,391,819	6,047,785	6,344,034	10,418,216	5,165,978	5,252,238
	% population by sex, in total	100.0	49.2	50.8	100.0	48.8	51.2	100.0	49.6	50.4
2002	Population - total	21,680,974	10,568,741	11,112,233	11,435,080	5,493,397	5,941,683	10,245,894	5,075,344	5,170,550
	% population by sex, in total	100.0	48.7	51.3	100.0	48.0	52.0	100.0	49.5	50.5
2011	Population - total	20,121,641	9,788,577	10,333,064	10,858,790	5,185,636	5,673,154	9,262,851	4,602,941	4,659,910
	% population by sex, in total	100.0	48.6	51.4	100.0	47.8	52.2	100.0	49.7	50.3

Source: "Census Of Population And Housing - 1992, 2002" (1992, 2002) and Table no. 2 - "Stable population by sex and age group - categories of localities, macro regions, development regions and counties" from "Census of Population And Housing - 2011 "(2011)

One can notice that population of Romania and its demographic structure underwent new evolutions and mutations. The changes in the population dynamics are the direct result of the trends regarding demographic phenomena, birth, mortality and migration (internal and external).

Regarding the structure of population by sex, the female population is predominant, its share increasing from 50.8% in 1992 to 51.4% in 2011.

The demographic aging process is more visible by comparing the two age groups of the elderly:

- **increasing trend** - the 60 - 64 years old group was of 1,232,053 persons in 1992 (representing 5.4% of the total), 1,143,333 persons in 2002 (representing 5.3% of the total), and 1,244,286 persons in 2011 (representing 6.2% of the total);

- **increasing trend** – there were 2,510,259 persons in the 65 age group in 1992 (representing 11.0% of the total), out of which 1,040,703 men (representing 41.5%) and 1,469,556 women (representing 58.5%). In 2002, there were 3,049,882 people this age group (representing 14.1% of the total), out of which 1,264,349 men (representing 41.5%) and 1,785,533 women (representing 58.5%); there were 3,247,744 persons in 2011 (representing 16.1% of the total), out of which 1,306,954 men (representing 40.2%) and 1,940,790 women (representing 59.8%).

Therefore, the elderly in the group of 65 and over in Romania increased by over 700,000 people from the 1992 census to the 2011 census, mainly as a consequence of:

- the changes in the couples' demographic behaviour towards their own reproduction;

- the natural diminution and negative balance of the external migration that led to the decline of young population;

- the changes in population mortality.

The changes in the structure and dynamics of the population in Romania are directly caused by the evolutions recorded at the level of the demographic phenomena (birth, mortality and migration).

Thus, there is a decrease of the ratio of the young population aged between 0 - 14 years, from 22.7% (in 1992) to 15.9% (in 2011) and an increase of the elderly of 65 and over, from 11.0 % (in 1992) to 16.1% (in 2011).

The elderly cannot be regarded as a homogeneous entity, it includes the subgroup of "younger" seniors (65-74 years) and the subgroup of "older" seniors (75 and over).

2. Population aging index in Romania

The aging index represents the percentage ratio between the number of persons aged 60 and over and that of children aged between 0 and 14. The aging index of the population of Romania, on July 1, 2012, is presented in Table 2.

Table no. 2:

The aging index of the population of Romania by sex and development regions, on July 1, 2012

Region	Persons		
	Total	Male	Female
Total	140.2	114.2	167.7
North – East	115.2	95.3	136.1
South – East	143.0	117.7	169.7
South – Muntenia	158.0	127.3	190.5
South – West - Oltenia	163.5	134.7	194.2
West	150.5	121.0	181.8
North - West	131.3	107.2	156.6
Central	130.7	108.2	154.5
Bucharest - Ilfov	153.1	119.4	189.1

Source: National Statistics Institute

With regard to data on July 1, 2012 in Romania, the aging index was 140.2% (167.7% - female, 114.2% - male). The regions most affected by aging were: South-West - Oltenia - 163.5% (194.2% - female, 134.7% - male) and South-Muntenia - 158.0% (190.5% - female, 127.3% - male), and the regions least affected by the phenomenon of aging were: Central - 130.7% (154.5% - female, 108.2% - male) and North-East - 115, 2% (136.1% - female, 95.3% - male).

Thus, the considerable differences between the aging index for females and males are pointed out, which is an additional proof supporting the feminization of the aging process of the Romanian population.

3. Economic and demographic dependency and its consequences

Aging population negatively affects the development of economic and social life but also the perspective of demographic evolution. They are highlighted mainly by the report of economic and demographic dependency.

There was a decrease in the number of the employed population, whereas the number of the retired increased. From this perspective, there is an increase of economic dependency. Thus, from 315.1 retired persons with state social insurance[63] per 1,000 employees in 1990, there were 1,125.0 pensioners per 1,000 employees in 2010; their number slightly decreased to 1,073.1 pensioners per 1000 employees in 2013. As for the demographic dependency report, in July 2012, there were 21.5 elderly per 100 adults (15-64 years), with 5.7 persons more than in 1990. (Table no. 3).

[63] *Only the state social insurance pensioners were considered; the oscillation of the economic dependency ratio between 2006 - 2013 was due to the slight variation of the number of employees.*

Table 3:

The dependency rate of young and elderly per 100 adults, by variant designs, in 2012, 2030, 2060.

		2030 by variant			2060 by variant		
	July 1, 2012	constant	optimistic	pessimistic	constant	optimistic	pessimistic
Youth and elderly per 100 adults	2.9	9.1	0.3	7.9	3.4	7.6	59.8
-female	6.4	4.7	6.0	3.4	1.8	6.5	68.2
-male	9.4	3.7	4.6	2.4	5.3	9.1	51.6
Youth per 100 adults	1.4	9.8	0.5	9.1	9.8	2.7	17.1
-female	0.8	.4	0.1	8.7	9.6	2.6	16.9
-male	2.0	0.2	0.8	9.4	9.9	2.8	17.3
Elderly per 100 adults	1.5	9.3	9.8	8.8	3.6	4.9	42.7
-female	5.6	5.3	5.9	4.7	2.2	3.9	51.3
-male	7.3	3.5	3.8	3.0	5.4	6.3	34.2

Source: National Institute of Statistics (2012) and "Projecting the population of Romania at the horizon of 2060 (2030, 2060), pp.29-44

As can be seen for all the design variants, the number of young population per 100 adults will continue to decrease, reaching the pessimistic version of 19.1 persons (17.1 persons in 2060) by 2030, and the optimistic one of 20.5 people (22.7 people in 2060).

The changes that would occur in the population by age groups will determine an increase in the number of persons considered "dependent", respectively with an age under 15 and over 65 per 100 adults, with the lowest values in the pessimistic variant.

The working population, despite undergoing a significant decrease between and 2030-2060, will be about 60.0% of the total population during the 2030-2060 forecast horizon, but the age group structure will become unbalanced.

Within this population segment, at least until 2030, the "old" age groups (near the retirement threshold) will predominate.

In the medium to long term, the ratio between pensioners and employees will remain high, as the structure of Romania's population is atypical; the generations aged 23-48 are very numerous (as a result of the aggressive pro-natalist policies in the period before 1989), whereas the generations aged 0 - 22 are very rare (transition generations).

Thus, rare generations already began to enter the labour market and the increase of the number of employees will not be high. The number of the elderly per 100 adults will increase continuously; the estimates show a steadily increase after 2030 as a result of the massive entry of the many generations born after 1966 in the population group aged 65 and over. Therefore if this ratio will be around 30.0% in the year 2030, it will reach 44.9% in 2060 in the optimistic version, 43.6% in the constant version and 42.7% in the pessimistic version (table no. 3).

4. Conclusions

In Romania, as well as in the other countries affected by demographic aging, the direct causes which led to the aging of population include those related to the demographic factors: the decrease of the birth rate and the increase of the mortality rate, altogether with the influence of the migration flows.

The most important element was the decrease of the birth rate, which had a major influence on the population structure by age groups, contributing to the acceleration of demographic aging. Increased mortality played a secondary role.

The decrease of the birth rate in Romania was fundamentally influenced by the uprooting of the young population from the rural area, which relocated in large numbers in the urban area; they gradually abandoned the rural population's traditional demographic procreative behaviour and switched to a new demographic behaviour based on rigorous planning of births.

Thus, there was an increased demographic aging in rural areas and a gap between the two environments.

Unlike the somewhat latent demographic consequences, the economic consequences have been showing their acute nature for a long time, becoming particularly serious in the recent years.

As for the social consequences of the aging groups of people, they represent a field of research, considering the multiple situations this category of population faces and its various particularities.

Within this framework, distinctive research is necessary on homogeneous sub-collectivities, as the group of the elderly or long living people, for example, generates some implications, whereas the implications among the old males versus the old females, or the married, compared to the widowed, divorced, and single generate different implications.

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LONG-RUN DYNAMICS OF REGIONAL COMPETITIVENES IN FINANCIAL AND INSURANCE ACTIVITIES

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Abstract:

In order to analyse the long-term economic evolution, we started from the hypothesis that, at regional level, the ability of the economic sectors to support their own development and the evolution of productivity are relevant indicators for sectoral competitiveness. To this end we tested for 104 Union European regions (NUTS-1 level) the extent to which the regional efforts to support research activities cause the development processes in the financial and insurance activities. As a methodology, we used unit root tests in panel, dynamic panel analysis, and cointegration models. We have identified a stable long-term relationship between productivity and the dynamics of research activities, and also that the increase in productivity in financial and insurance activities exceeds, on average, the overall increase in productivity at the regional level.

Keywords: *regional productivity, financial and insurance activities, dynamic panel analysis, cointegration models.*

JEL Classification: C23, C58, R11.

Introduction

According to the European Commission definition, "regional competitiveness is the ability of a region to offer an attractive and sustainable environment for firms and residents to live and work." (Annoni & Dijkstra, 2019, p. 3). For analysing the long-term economic development, we started from the hypothesis that, at regional level, the ability of the economic sectors to support their own development and the evolution of productivity are relevant indicators for sectoral competitiveness. This approach comes near to the World Economic Forum concept, according to which competitiveness is defined as "the set of institutions, policies and factors that determine the level of productivity" (Schwab & Sala-i-Martín, 2017, p. ix).

On the other hand, in literature, it is widely recognised that "high quality human resources are fundamental to national development and related technological and economic growth" (Chou & Chang, 2008, p. 224) and "the economic growth of a country is influenced by the state of human resources in science and technology" (Achelia, Asmara, Akbar, & Tasrif, 2017, p. 494). In this framework, we analysed the relationships between *the human resources employed in science and technology in financial and insurance activities* and the development of these activities in European NUTS-1 regions.

1. Data and Methodology

We used the annual data regarding the regional gross value added, employment and human resources employed in science and technology. The analysed data refer, on the one hand, to all the activities carried out at regional level and, on the other hand, to f*inancial and insurance activities*. The data are from Eurostat, cover the European NUTS-1 regions, over the period between 2000-2018.

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Table 1:

Sources of data

o.	*Regional Series*	*ymbol*	*Source: Eurostat*
.	Gross Value Added	VA	"Gross value added at basic prices by NUTS 3 regions" [nama_10r_3gva], Million euro, NACE_R2 (2000-2017)
.	Gross Value Added in *Financial and insurance activities*	IA_GVA	
.	Employment	MP	"Employment (thousand persons) by NUTS 3 regions" [nama_10r_3empers], NACE_R2 (2000-2017)
.	Employment persons in *Financial and insurance activities*	IA_EMP	
.	Persons employed in science and technology	RST	"Employed HRST by category, NACE Rev. 1.1 activity and NUTS 1 regions (1999 - 2018)" [hrst_st_rsec] and "Employed HRST by category, NACE Rev. 2 activity and NUTS 1 regions (from 2008 onwards)" [hrst_st_rsec2], thousand persons (1999-2018)
.	Persons employed in science and technology in *Financial and insurance activities*	IA_HRST	

As a methodology, we used unit root tests in panel, Granger causality tests, dynamic panel analysis and cointegration tests.

The regional series are generated by non-stationary processes, but they have stationary dynamics. Unit root tests for the data series, for the differenced series, and for the rate of change are presented in *Annex 1*.

In the models we used the following definitions:

The symbol …	means …
$(FIA\_W)_{it} = \left(\frac{FIA\_GVA}{FIA\_EMP}\right)_{it}$	Productivity (W) in Financial and Insurance Activities (FIA), region *i*, year *t*
$W_{it} = \left(\frac{GVA}{EMP}\right)_{it}$	Global Productivity (all economic activities) in region *i*, year *t*
FIA	Regional financial and insurance activities
GVA	Regional gross value added
EMP	Regional employed persons
HRST	Regional persons employed in science and technology

2.Human resources employed in science and technology and the dynamics of financial and insurance activities

2.1. Regional gross value added in financial and insurance activities

To analyze the impact of human resources employed in science and technology (HRST) on regional gross value added in financial and insurance activities (FIA_GVA), we have built a panel data model as follows:

$r(FIA\_GVA_{it}) = a_0 + a_1 r(FIA\_HRST_{it}) + a_2 r(GVA_{it}) + \mu_i + \delta_t + e_{it}$,

where

- ✓$r(GVA_{it})$ denotes the growth rate of gross value added for region *i*, year *t* (for all the economic activities);
- ✓$r(FIA\_GVA_{it})$ means the growth rate of gross value added (GVA) in financial and insurance activities, for region *i*, year *t*;
- ✓$r(FIA\_HRST_{it})$ signifies the dynamics of human resources employed in science and technology, in financial and insurance activities, for region *i*, year *t*;
- ✓μ_i assesses for the regional-specific (fixed or random) effects (the particularities of each region)
- ✓δ_t specific (fixed or random) time effects (the particularities of each year);
- ✓e_{it} is the idiosyncratic errors variable (which varies across time and regions).

The model coefficients have the following significance:

- ✓a_0 is a dimensional coefficient,
- ✓a_1 evaluates the impact of employment in S&T [r(FIA_HRST)] on the dynamics of gross value added in FIA
- ✓a_2 estimates the impact of the general conditions related to regional economic dynamics [r(GVA)] on the gross added value of the FIA.

The output of the panel data model is the following:

$$r(FIA\_GVA_{it}) = \underset{[2.060]}{0.0181} \cdot r(FIA\_HRST_{it}) + \underset{[25.365]}{0.9231} \cdot r(GVA_{it}) + \delta_t + u_{it}$$

(under estimators, in bracket, t-statistic). In regression equation, u_{it} is the residual variable. The coefficients that evaluate the connection between gross value added growth out of financial and insurance activities [r(FIA_GVA)] and the dynamics of human resources employed in science and technology, in the same activities [r(FIA_HRST)], respectively the regional gross value added growth for all economic activities [r(GVA)] are significantly different from zero: for a_1, $p(H_0) < 0.02$, and for a_2, $p(H_0) < 0.01$. The model, without specific (regional) individual effects, but with specific (fixed) time effects, is significant. The F-stat associated with the hypothesis of redundancy (for fixed time effects) is $F(18,1186) = 8.66$, with $prob(F) < 0.01\%$.

The model explains 44% of the total variation of the "gross value added in financial and insurance activities" from its mean ($R2 = 0.4365$) and is significant as a whole: F-statistic = 339.2, so the probability of null hypothesis (H_0: all the coefficients are zero) is almost zero.

The regional gross value-added growth in financial and insurance activities is positively influenced by the dynamics of human efforts made for the development of research activities and for the activities related to technology advance (marginal impact is $\hat{a}_1 = 0.018$). The dynamics of activities in FIA follows the overall evolution of regional economic activities, with a sub-unitary (but close to one) coefficient of marginal impact ($\hat{a}_2 = 0.923$).

2.2. The regional productivity in financial and insurance activities

We analyze the regional impact of human resources employed in science and technology on productivity in "financial and insurance activities", where the productivity was measured as ratio between gross value added (FIA_GVA_{it}) and employment (FIA_EMP_{it}) in the respective sector (thousand euro/persons, *i* is an index of region and *t* – time). Regional series that measure productivity for all the economic activities (W) are not stationary. If the series are calculated in the first difference, or as annual change rates, then the probabilities attached to the unit root hypotheses in the panel (common or individual) are almost zero, for all standard tests. We assume, therefore, that the stochastic processes that generate the series of regional productivity is I(1) but the dynamic series (calculated both in first difference and as annual change rates) are stationary. The series that estimate productivity in "financial and insurance activities" (FIA_W) are stationary. The nature of the series, analysed by the panel unit root tests is presented in *Annex 1*.

a. The causality relationships

Regional series on "human resources employed in science and technology, in financial and insurance activities" (FIA_HRST) and regional productivity for all the economic activities (W) are not stationary. The series productivity in "financial and insurance activities" (FIA_W) is stationary. We therefore apply the Toda-Yamamoto version of the Granger causality test. For $p_{max} = 11$, lag order selected by all the usual criterion is p = 9. The application of the Granger causality test (Toda-Yamamoto version) for the VAR(9) model leads to the following results:

Table 2. Granger causality test (Toda-Yamamoto version)

Null Hypothesis:	Chi-sq	df	Prob.
FIA_HRSTdoes not Granger CauseFIA_W	9.760	9	0.3703
Wdoes not Granger CauseFIA_W	66.162	9	0.0000

Source: VAR Granger Causality/Block Exogeneity Wald Tests in EViews, based on Eurostat data (see Table 1). Sample:1995 2017. Included observations: 474.

The Granger causality test (Toda-Yamamoto version for nonstationary series) *does not* reject, at conventional significance levels, the null hypothesis that human resources employed in science and technology, in regional financial and insurance activities (FIA-HRST) *does not* cause the regional productivity from these activities (FIA_W). If we reject the non-causality hypothesis, the risk of error is 37%, higher than the standard 5% threshold. Instead, the test rejects a non-causal hypothesis regarding the relationship between productivity at the all regional economic activities (W) and productivity in the "financial and insurance activities" (FIA_W).

The series "regional productivity growth" for all the activities [r(W)] and for financial and insurance activities [r(FIA_W)] as well as "human resources employed in science and technology, in regional financial and insurance activities" [r(FIA_HRST)] are stationary. This means that, for the analysis of the intercorrelations between the transformed variables, the standard Granger causality test can be applied. First, we select lag = 4 in VAR model (see *Annex 2*). The Granger causality test for the VAR(4) model leads to the following results:

Table 3. Granger causality test for the VAR(4) with the dynamics of variables

Null Hypothesis:	^{2}	f	rob.
r(FIA_HRST) does not Granger Cause r(FIA_W)	.2974		.1780
r(W) does not Granger Cause r(FIA_W)	9.0762		.0000

Source: VAR Granger Causality/Block Exogeneity Wald Tests in EViews, based on Eurostat data (see Table 1). Sample (adjusted): 1995 2016. Observation included: 845.

Regional data *do not reject*, at conventional significance levels, the null hypothesis that the annual growth rate of human resources employed in science and technology [r(FIA_HRST)] *does not*

cause the growth of productivity in financial and insurance activities [r(FIA_W)]. If we reject the non-causality hypothesis, the error risk (0.178) is higher than the conventional significance levels of 0.05. Instead, the test suggests a causal relationship from the growth rate of productivity at the regional level [r(W)] to the [r(FIA_W)] – increase rate of productivity in financial and insurance activities (the probability attached to the null hypothesis of non-causality is almost zero).

b. The Dynamic Panel Data

Since the series "regional productivity growth" for all the activities [r(W)] and for financial and insurance activities [r(FIA_W)] as well as "human resources employed in science and technology, in regional financial and insurance activities [r(FIA_HRST)] are stationary and the Granger causality tests do not reject all the interrelations between these variables, we run a Dynamic Panel Data model. These models are designed for panels with a large number of cross-sections and a short time series (Arellano & Bond, 1991)

Table 4. Dynamic Panel Data Model

Dependent variable: r(FIA_W) – regional productivity growth in "financial and insurance activities"

Variable	Coefficient	Std. Error	t-Statistic	Prob.
$r(FIA\_W_{t-1})$	-0.057899	0.003274	-17.68229	0.0000
r(FIA_HRST)	0.037807	0.000472	80.07144	0.0000
r(W)	0.783349	0.001415	553.4193	0.0000

Method: Panel Generalized Method of Moments. Transformation: first differences
Sample (adjusted): 2001 2017, cross-sections included: 75, total panel observations: 1022
White period instrument weighting matrix.
Instrument specification: @din(FIA_W, -2). Constant added to instrument list
Arellano-Bond Serial Correlation Test: AR(1) = -5.511 (prob. = 0.000), AR(2) = 1.398 (prob.=0.162)

Source: EViews, based on Eurostat data (*see* Table 1)

In the model, all the coefficients are significant at conventional levels (1%). The coefficient of AR(1) in Arellano-Bond test is significant and negative, and AR(2) is insignificant, which means that the errors (innovations) are not correlated. Moreover, the J-test for over-identifying restrictions has an associated prob(J-statistic) = 0.2429 > 0.05.

According to the results from previous table, the productivity dynamics in "financial and insurance activities" [r(FIA_W)] is subject to a weak inertial negative effect and the increase of global productivity at the regional level [r(W)] was largely transferred on the productivity of the financial and insurance services. The growth of "human resources employed in science and technology, in regional financial and insurance activities" [r(FIA-HRST)] was slightly positively correlated with the productivity in "financial and insurance activities" [r(FIA_HRST)].

c. The long-term relationship (cointegration)

We test for a long-term relationship (cointegration) between productivity in financial and insurance activities (FIA_W), human resources employed in science and technology, in regional financial and insurance activities (FIA-HRST) and regional productivity – all the economic activities (W). Seven out of 11 Pedroni Residual Cointegration Tests reject the Null Hypothesis of no cointegration (included observations: 2730; cross-sections included: 75 (30 dropped); no deterministic intercept or trend). The tests are detailed in *Annex 3*.

The results of estimating the cointegration relationship are as follows:

$$(FIA\_W)_{it} = \underset{[2.076]}{0.400713} \cdot (FIA\_HRST)_{it} + \underset{[318.052]}{2.075559} \cdot W_{it}\ ,\ R^2 = 0.9289$$

Note: t-statistic in [.]; Method: Panel Fully Modified Least Squares (FMOLS), periods included: 18 (2000-2017), regions included: 75; total panel (unbalanced) observations: 1157; panel method: weighted estimation; cointegrating equation deterministic: C

The long-term equilibrium relationship between regional *Productivity in Financial and Insurance Activities* (FIA_W) and *Persons employed in science and technology in FIA* (FIA_HRST) is positive and significantly different from zero (0.40): At the regional level, efforts to develop scientific

activities and those that generate technological progress are associated with an increase in efficiency in *Financial and insurance activities*.

The coefficient that associates the dynamics of *regional productivity in financial and insurance activities* with *global regional productivity (all NACE activities)* is greater than two (2.076). Given that the variables are expressed in the same unit (percentages), this means that the increase in regional productivity in financial and insurance activities exceeds about twice, on average, the regional increase in productivity, all NACE activities.

Table 5. Regional productivity

	All NACE activities (W)	Financial and insurance activities (FIA_W)
Mean	48.07206	87.32256
Median	50.62326	86.15721
Maximum	122.8619	298.1374
Minimum	2.445763	7.576440
Std. Dev.	20.78572	43.09719
Common observations	1287	

Source: EViews, based on Eurostat data (*see* Table 1)

Furthermore, statistical calculations confirm the results of the cointegration analysis: the main characteristics of the distribution of series "Regional productivity in Financial and insurance activities" (e.g. mean, media, maximum and minimum values, even standard distribution) are about twice as large as the corresponding features of the series "Regional productivity, all NACE activities" (see table 6).

Conclusions

The regional gross value-added growth, in FIA (financial and insurance activities), is positively influenced by the dynamics of human efforts made for the development of research activities and for the activities related to technology advance. The dynamics of FIA follows the overall evolution of regional economic activities, with a sub-unitary (but close to one) coefficient of marginal impact (0.923).

The Granger causality test (Toda-Yamamoto version for nonstationary variables) do not reject at conventional significance levels the null hypothesis that HRST (human resources employed in science and technology) in FIA *does not* cause the regional productivity from these activities. Instead, the test rejects a non-causal hypothesis regarding the relationship between *regional productivity* (all NACE activities) and *regional productivity in FIA*.

If we analyse the annual growth rates, regional data *do not reject* the null hypothesis of non-causality between the increase in *human resources employed in science and technology* and the growth of *regional productivity in financial and insurance activities*. Instead, the test suggests a causal relationship from the growth rate of *regional productivity* (all activities) with the increase rate of *productivity in financial and insurance activities*.

According to the results from the Dynamic Panel Model (Arellno-Bond methodology), the dynamics of productivity in "financial and insurance activities" is subject to a weak inertial negative effect and the increase of productivity at the regional level (all activities) was largely transferred on the productivity of the FIA. Furthermore, the growth rate of "human resources employed in science and technology in regional financial and insurance activities" was slightly positively correlated with the productivity in "financial and insurance activities".

We also tested for a long-term relationship (cointegration) between productivity in FIA, HRST in regional FIA and regional productivity – all the economic activities. We found that the long-term equilibrium relationship between regional *productivity in* FIA and HRST is positive and significantly different from zero, which means that the efforts to develop scientific activities are associated with an increase in efficiency in *financial and insurance activities*.

The coefficient that associates the dynamics of *regional productivity in financial and insurance activities* with *global regional productivity (all NACE activities)* is greater than two (2.076). Given that the variables are expressed in the same unit (percentages), this means that the increase in regional productivity in financial and insurance activities exceeds about twice, on average, the regional increase in productivity, all NACE activities.

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Annex 1. Unit Root Tests for regional panel data series

For all the tests:

1. The list of European Regions is for Eurostat, Database, *Regional statistics by NUTS classification*, https://ec.europa.eu/eurostat/data/database.
2. Exogenous variables: individual (regional) effects.
3. Automatic lag length selection based on SIC

For all the tables: *Source*: EViews, based on Eurostat data (*see* Table 1)

A1.1. Panel Unit Root Tests for "Regional Gross Value Added"

a. Regional Gross value added – total, all NACE activities

Sample: 2000 2017

Method	level		1st difference		annual growth rate	
	Statistic	Prob.	Statistic	Prob.	Statistic	Prob.
Null: Unit root (assumes common unit root process)						
Levin, Lin & Chu t*	1.96522	0.9753	-17.0443	0.0000	-16.4374	0.0000
Null: Unit root (assumes individual unit root process)						
Im, Pesaran and Shin W-stat	8.16121	1.0000	-14.6725	0.0000	-14.8510	0.0000
ADF - Fisher Chi-square	111.536	0.9999	515.270	0.0000	518.049	0.0000
PP - Fisher Chi-square	122.415	0.9989	568.270	0.0000	797.390	0.0000

The tests suggest that the series "regional gross value added – total, all NACE activities" are I(1) - stationary in differences, and the dynamics is a stationary series.

b. Regional Gross value added in Financial and insurance activities

Sample: 2000 2017

Method	level		1st difference		annual growth rate	
	Statistic	Prob.	Statistic	Prob.	Statistic	Prob.
Null: Unit root (assumes common unit root process)						
Levin, Lin & Chu t*	-5.49461	0.0000	-20.6216	0.0000	-19.9097	0.0000
Null: Unit root (assumes individual unit root process)						
Im, Pesaran and Shin W-stat	-2.39235	0.0084	-17.1241	0.0000	-16.6998	0.0000
ADF - Fisher Chi-square	213.406	0.0022	580.054	0.0000	570.684	0.0000
PP - Fisher Chi-square	150.262	0.6572	593.276	0.0000	593.367	0.0000

The tests suggest that the series "regional gross value added in financial and insurance activities" are I(1) - stationary in differences, and the dynamics is a stationary series.

A1.2. Panel Unit Root Tests for "Regional Employment"

a. Regional Employment – total, all NACE activities

Sample: 2000 2018

Method	level		1st difference		annual growth rate	
	Statistic	Prob.	Statistic	Prob.	Statistic	Prob.
Null: Unit root (assumes common unit root process)						
Levin, Lin & Chu t*	5.10454	1.0000	-12.6830	0.0000	-16.5089	0.0000
Null: Unit root (assumes individual unit root process)						
Im, Pesaran and Shin W-stat	5.47379	1.0000	-10.6091	0.0000	-17.0190	0.0000
ADF - Fisher Chi-square	169.699	0.2483	389.014	0.0000	597.787	0.0000
PP - Fisher Chi-square	115.801	0.9952	361.298	0.0000	628.018	0.0000

The tests suggest that the series "regional employment – total all NACE activities" are I(1) - stationary in differences, and the dynamics is a stationary series.

b. Regional Employment persons in Financial and insurance activities

Sample: 2000 2018

Method	level		1st difference		annual growth rate	
	Statistic	Prob.	Statistic	Prob.	Statistic	Prob.
Null: Unit root (assumes common unit root process)						
Levin, Lin & Chu t*	-5.49461	0.0000	-20.6216	0.0000	-19.9097	0.0000
Null: Unit root (assumes individual unit root process)						
Im, Pesaran and Shin W-stat	-2.39235	0.0084	-17.1241	0.0000	-16.6998	0.0000
ADF - Fisher Chi-square	213.406	0.0022	580.054	0.0000	570.684	0.0000
PP - Fisher Chi-square	150.262	0.6572	593.276	0.0000	593.367	0.0000

The tests suggest that the series "regional employment in financial and insurance activities" are I(1) - stationary in differences, and the dynamics is a stationary series.

A1.3. Panel Unit Root Tests for "Regional Productivity"

a. Regional Productivity, all NACE activities

Sample: 2000 2017

Method	level		1st difference		annual growth rate	
	Statistic	Prob.	Statistic	Prob.	Statistic	Prob.
Null: Unit root (assumes common unit root process)						
Levin, Lin & Chu t*	-6.41317	0.0000	-22.7262	0.0000	-20.5476	0.0000
Null: Unit root (assumes individual unit root process)						
Im, Pesaran and Shin W-stat	2.94486	0.9984	-18.6322	0.0000	-16.6744	0.0000
ADF - Fisher Chi-square	155.683	0.5372	632.655	0.0000	576.165	0.0000
PP - Fisher Chi-square	381.165	0.0000	702.787	0.0000	680.662	0.0000

The tests suggest that the series "regional productivity, all NACE activities" are I(1) - stationary in differences, and the dynamics is a stationary series.

b. Regional Productivity in Financial and insurance activities

Sample: 2000 2017

Method	level		annual growth rate	
	Statistic	Prob.	Statistic	Prob.
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-5.93110	0.0000	-27.6317	0.0000
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-2.23052	0.0129	-22.3193	0.0000
ADF - Fisher Chi-square	205.876	0.0063	722.246	0.0000
PP - Fisher Chi-square	188.768	0.0478	782.988	0.0000

The tests suggest that the series is I (0) - stationary in differences.

A1.4. Panel Unit Root Tests for "Regional Human Resources in Science and Technology Activities"

a. Persons employed in science and technology – total, all NACE activities

Sample: 1999 2018

Method	level		1st difference		annual growth rate	
	Statistic	Prob.	Statistic	Prob.	Statistic	Prob.
Null: Unit root (assumes common unit root process)						
Levin, Lin & Chu t*	2.95413	0.9984	-32.4732	0.0000	-34.3210	0.0000
Null: Unit root (assumes individual unit root process)						
Im, Pesaran and Shin W-stat	10.2340	1.0000	-29.8544	0.0000	-31.2198	0.0000
ADF - Fisher Chi-square	118.512	1.0000	1158.35	0.0000	1225.66	0.0000
PP - Fisher Chi-square	122.645	1.0000	1541.24	0.0000	2354.41	0.0000

The tests suggest that the series "persons employed in science and technology – total, all NACE activities" are I(1) - stationary in differences, and the dynamics is a stationary series.

b. Persons employed in science and technology in Financial and insurance activities

Sample: 1999 2018

Method	level		1st difference		annual growth rate	
	Statistic	Prob.	Statistic	Prob.	Statistic	Prob.
Null: Unit root (assumes common unit root process)						
Levin, Lin & Chu t*	-6.12516	0.0000	-32.8356	0.0000	-34.5162	0.0000
Null: Unit root (assumes individual unit root process)						
Im, Pesaran and Shin W-stat	-1.15930	0.1232	-29.3165	0.0000	-30.7005	0.0000
ADF - Fisher Chi-square	250.541	0.0068	1109.49	0.0000	1155.37	0.0000
PP - Fisher Chi-square	234.196	0.0399	1745.40	0.0000	1827.74	0.0000

The tests suggest that the series "persons employed in science and technology in financial and insurance activities" are I(1) - stationary in differences, and the dynamics is a stationary series.

Annex 2. VAR Lag Order Selection Criteria

VAR Lag Order Selection Criteria
Endogenous variables: r(FIA_W) r(FIA_HRST) r(W)
Exogenous variables: C
Sample: 2000 2017. Included observations: 621

Lag	LogL	LR	FPE	AIC	SC	HQ
0	1825.528	NA	5.67e-07	-5.869656	-5.848249	-5.861336
1	1849.076	46.79160	5.41e-07	-5.916508	-5.830878	-5.883226
2	1884.026	69.11177	4.97e-07	-6.000082	-5.850230	-5.941838
3	1895.131	21.85354	4.94e-07	-6.006864	-5.792790	-5.923658
4	1944.283	96.2462*	4.3e-07*	-6.13618*	-5.85788*	-6.02801*
5	1951.617	14.28909	4.37e-07	-6.130811	-5.788292	-5.997681
6	1959.817	15.89930	4.38e-07	-6.128236	-5.721495	-5.970145
7	1965.889	11.71247	4.42e-07	-6.118804	-5.647841	-5.935751

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

Source: calculations in EViews, based on Eurostat data (*see* Table 1)

Annex 3. The cointegration relationship

The cointegration relationship between "productivity in financial and insurance activities", "human resources employed in science and technology" and "global regional productivity"

Alternative hypothesis: common AR coefs. (within-dimension)

	Statistic	Prob.	Weighted Statistic	Prob.
Panel v-Statistic	1.796400	0.0362	0.208334	0.4175
Panel rho-Statistic	-1.010849	0.1560	-1.257948	0.1042
Panel PP-Statistic	-4.090680	0.0000	-4.801697	0.0000
Panel ADF-Statistic	-2.566487	0.0051	-3.102125	0.0010

Alternative hypothesis: individual AR coefs. (between-dimension)

	Statistic	Prob.
Group rho-Statistic	1.864076	0.9688
Group PP-Statistic	-6.504420	0.0000
Group ADF-Statistic	-3.172324	0.0008

Source: Pedroni Residual Cointegration Test in EViews, series FIA_W, FIA_HRST and W, based on Eurostat data (*see* Table 1)

Likewise, Kao Residual Cointegration Test reject the Null Hypothesis of no cointegration (the associated probability is 0.0001).

THE INFLUENCE OF SOME R&D FACTORS ON THE EXPORT OF GOODS AND SERVICES, IN THE CONTEXT OF PANEL ANALYSIS

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Abstract:

The article aims to analyze the influence of factors that characterize the R&D sector on the export of goods and services, one of the factors that make a positive contribution to the gross domestic product of a country, by applying econometric models having as premise the current stage of the researchers on the approached topic.

The results will highlight the importance of the R&D activities, the innovations generated by them contributing considerably to the export, respectively to the economic growth.

Keywords: *R&D, patents, export*

JEL classification: *O3, O34, O40*

Introduction

Numerous studies suggest that R&D and exports should be complementary in assessing their impact on economic performance. In this context, Golovko and Valentini consider that the positive impact of the innovation process on increasing the competitiveness of firms is greater if they export (Golovko, E., Valentini, G., 2011,p. 362-380).

Krugman considers that the innovation process is one of the determining factors of the export (Krugman, P., 1979, p. 253-266), Girma, Gorg and Hanley believe that the export intensifies the activities of R&D (Girma, S., Gorg, H., Hanley, A., 2008, p. 750-773) and Bleaney and Wakelin consider that for the exporting firms the innovation capacity is crucial (Bleaney, M., Wakelin, K., 2002, p.3-5).

Based on a series of data that includes approximately 340 thousand firms from Portugal, 2006... 2012, Neves, Teixeira and Silva (Neves, A., Teixeira, A.C., Silva T.S., 2016, p. 125-156) confirmed the complementarity between R&D and the export of goods and services and highlighted on the basis of a model panel data, the positive impact of R&D and export on sales growth which is enhanced when both activities occur simultaneously.

Lachenmaierand and Wessmann (Lachenmaier,S., Woessmann, L., 2006, p. 317-350) believe that when firms invest considerable in R&D, the products/services become competitive and have a positive impact on the export of goods and services, and Aw, Roberts and Xu (Aw, B.Y., Roberts, M.J., Xu, D.Y., 2011, p. 1312-1344) consider that investments in R&D and exports are interdependent, both influencing firms' profitability.

Also, Filatotchev and Piesse analyze the relationship between R&D, export and sales growth of companies in the UK, Germany, Italy and France and find that both R&D activities and export intensity have a positive impact on sales growth (Filatotchev, I., Piesse, J., 2009, p. 1260-1276).

Econometric analysis by Bee Yan Aw, Mark J. Roberts, Tor Winston highlights the crucial role of R&D investments that gives Taiwanese electronics manufacturers the ability to use new

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technologies and suggests that export activity is an important mechanism for transfer technology (Yan Aw, B., Roberts, M., J., Winston, T., 2005, p. 1-24).

Description of the Problem

The analysis started from the observation that there are numerous studies that highlight the differences between EU member countries in terms of export of goods and services.

It is noted that the countries that allocate important funds to the R&D sector have a high technological level, registering a high dynamics of the innovation process, respectively of the export.

According to data provided by Eurostat, the expenditures on R&D in the EU-28 in 2017 was lower than in Japan, United States and China, according to Figure 1.

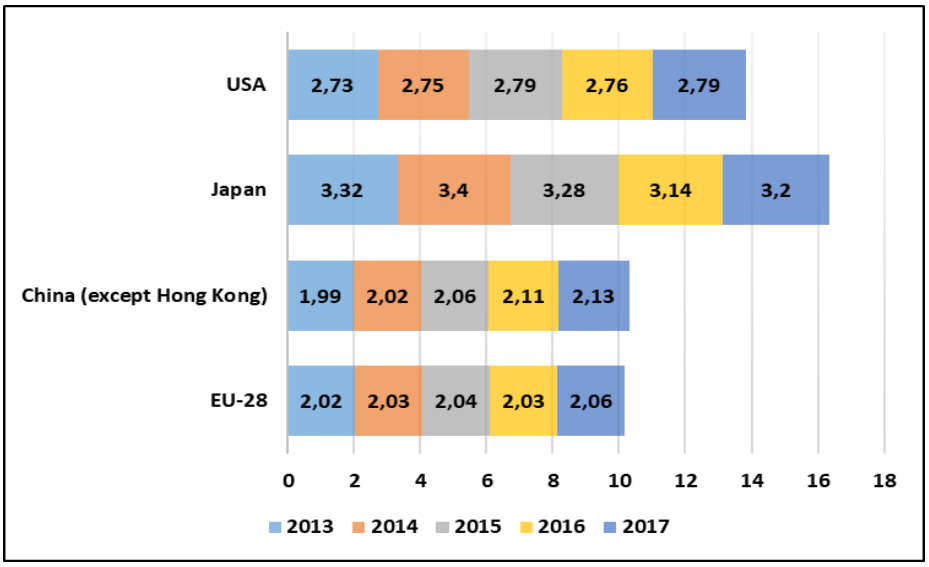


Figure 1 - R&D expenditures, 2013...2017 (% of GDP)

Source: Eurostat, Code: rd_e_gerdtot

In 2017, the EU allocated about 320 billion euros to the R&D sector, which represents 2.06% of GDP, 0.03 percentage points more than in 2016 and 0.29 percentage points more than in 2007.

Also, numerous studies highlight the relationship between some indicators of innovation performance and export performance in EU countries, R&D expenditures, human resources and the number of patents being cataloged as important causal factors for export growth.

In this context, using the EViews program, by testing the models with fixed and random individual effects, Granger causality, the variance decomposition and the impulse response function we evaluated the relationship between R&D expenditures, the number of patents and export.

Methodology and Data

Based on econometric models, we analyzed the conexion between the export of goods and services (weight in the total gross domestic product), the number of patent applications filed with the European Patent Office and the R&D expenditures (weight in the total gross domestic product).

The values are registered for some member countries of the European Union - Romania, Slovenia, Bulgaria, Poland and Hungary -, during 2007-2017, according to Table 1.

Table 1

Export of goods and services, the number of patent applications and the R&D expenditures, in some EU member countries, 2007-2017

Country	Year	Exports of goods and services (% of GDP)	Number of patent applications to the EPO	R&D expenditures (% of GDP)
Romania	2007	24.7	32.57	0.51
	2008	26.2	33.47	0.55
	2009	26	31.13	0.44
	2010	32.4	34.63	0.46
	2011	37	60.42	0.5
	2012	37.4	71.61	0.48
	2013	39.9	85.1	0.39
	2014	41.2	101.92	0.38
	2015	41	93.51	0.49
	2016	41.2	98.91	0.48
	2017	41.5	99.57	0.5
Slovenia	2007	67.9	120.11	1.42
	2008	66.3	138.91	1.63
	2009	57.3	123.25	1.82
	2010	64.3	106.26	2.06
	2011	70.2	112.13	2.42
	2012	72.9	126.72	2.57
	2013	74.2	127.88	2.58
	2014	76.2	135.09	2.37
	2015	77.1	119.09	2.2
	2016	78	112.36	2.01
	2017	83.2	114.25	1.86
Bulgaria	2007	52.4	12.17	0.43
	2008	52.5	18.65	0.45
	2009	42.3	15.83	0.49
	2010	50.2	16.97	0.56
	2011	59.1	26.38	0.53
	2012	60.8	33.82	0.6
	2013	64.9	39.82	0.64
	2014	64.9	47.44	0.79
	2015	64.1	31.88	0.96
	2016	64	31.06	0.78
	2017	67.4	29.33	0.75
Poland	2007	38.6	201.77	0.56
	2008	37.9	233.72	0.6
	2009	37.2	291.61	0.66
	2010	40.1	361.36	0.72
	2011	42.6	384.77	0.75
	2012	44.4	483.31	0.88
	2013	46.3	547.21	0.87

	2014	47.6	609.16	0.94
	2015	49.5	578.38	1
	2016	52.2	627.33	0.96
	2017	54.3	686.64	1.03
Hungary	2007	77.9	191.11	0.96
	2008	79.3	181.21	0.98
	2009	74.4	184.39	1.13
	2010	81.8	195.47	1.14
	2011	86.7	221.58	1.19
	2012	86.4	207.79	1.26
	2013	85.7	215.59	1.39
	2014	87.7	222.3	1.35
	2015	89	205.23	1.36
	2016	89.7	201.27	1.2
	2017	88.2	196.77	1.35

Source: Eurostat: [TET00003], [TSC00001], EPO: [SDG_09_40]

The linear regression model for panel data is written as:

$$y_{it} = \alpha + \beta x_{it} + e_{it},$$

in which, i = 1, 2, …, N represents the EU countries; t = 1, 2, …,T - time; α şi β - model parameters. The variables y_{it} and x_{ij} measure the recording of a phenomenon in structure *i,* at time *t.*

Panel data analysis allows the testing of models that are more complex than those based on time series analysis, a better analysis of the dynamics of structural adjustments and increases the efficiency and consistency of econometric estimates.

Jula considers that the panel model involves a joint analysis of cross-sectional observations, observations made over several time periods. The model is a balanced one if there is a record for each unit, at each time point. Otherwise, the model is an unbalanced one (Jula, D., 2014)

According to Arellano and Honore the combination of time series and cross-section data enriches the possible identifications, the economists being forced to study more closely the nature and source of identifying the parameters with potential (Arellano, M., Honore, B., 2001, p. 3229-3296).

Given this, on the panel data we built and tested the model with fixed and random individual effects and a VAR model on stationary data.

The overtake of the individual effects is achieved by decomposing the deviation e_{it} in:

$e_{it} = \mu_i + \eta_t + v_{it},$

in which, μ_i represents the variable that estimates the effect of variables not included in the model on the endogenous, in unit *i* (specific individual effect); η_t – the variable that estimates the effect of the variables not included in the model on the endogenous, at time *t* (the fixed effect in time); v_{it} is variable in time and between individuals.

The Fixed effects model assumes that the parameters μ_i and η_t have the null sum fixed and the estimation is done by the method of the least squares, after the addition of dummy variables.

The Random Effects model assumes that the variables μ_i, η_t and v_{it} are random, independent of each other, are not autocorrelated and are not heteroscedastic.

The VAR model (Vector Autoregressive Model) has the advantage of evaluating the response of a variable to a shock in another variable and is written as:

$$X_t = a_0 + a_1 X_{t-1} + a_2 Y_{t-1} + \varepsilon_{1t}$$

$$Y_t = b_0 + b_1 X_{t-1} + b_2 Y_{t-1} + \varepsilon_{2t}$$

in which, ε_{1t} şi ε_{2t} represents shocks, in period *t*, on variables *X* and *Y*.

It aims to evaluate the effects induced by various shocks on the variables in the system, to decompose the dispersion of the forecast error and to identify the causal relationships (the Granger test, assumes that if the previous values of the variable *Y* contribute significantly to the forecast of the current/future values of the variable *X*, then one can say that the variable *Y* is a Granger cause of *X*).

Results

To ensure the stationarity property, various transformations of the variables were performed, the Im-Pesaran-Shin Test confirming the stationarity of panel data at a level of significance of less than 5%, according to Table 2.

Table 2:

Im-Pesaran-Shin Test

Variable	The value of the statistic test	P-value
Export of goods and services (y)	-2.37804	0.0087
The number of patent applications (x1)	-2.40342	0.0081
R&D expenditures (x2)	-2.62204	0.0007

Source: the author

Several models were tested on the stationary panel data obtained, but the Hausman Test value (p value less than 0.05) confirms the validity of the model with random individual effects, in which the change of the export of goods and services depends directly, only by changing the share of R&D expenditures (see Figure 1).

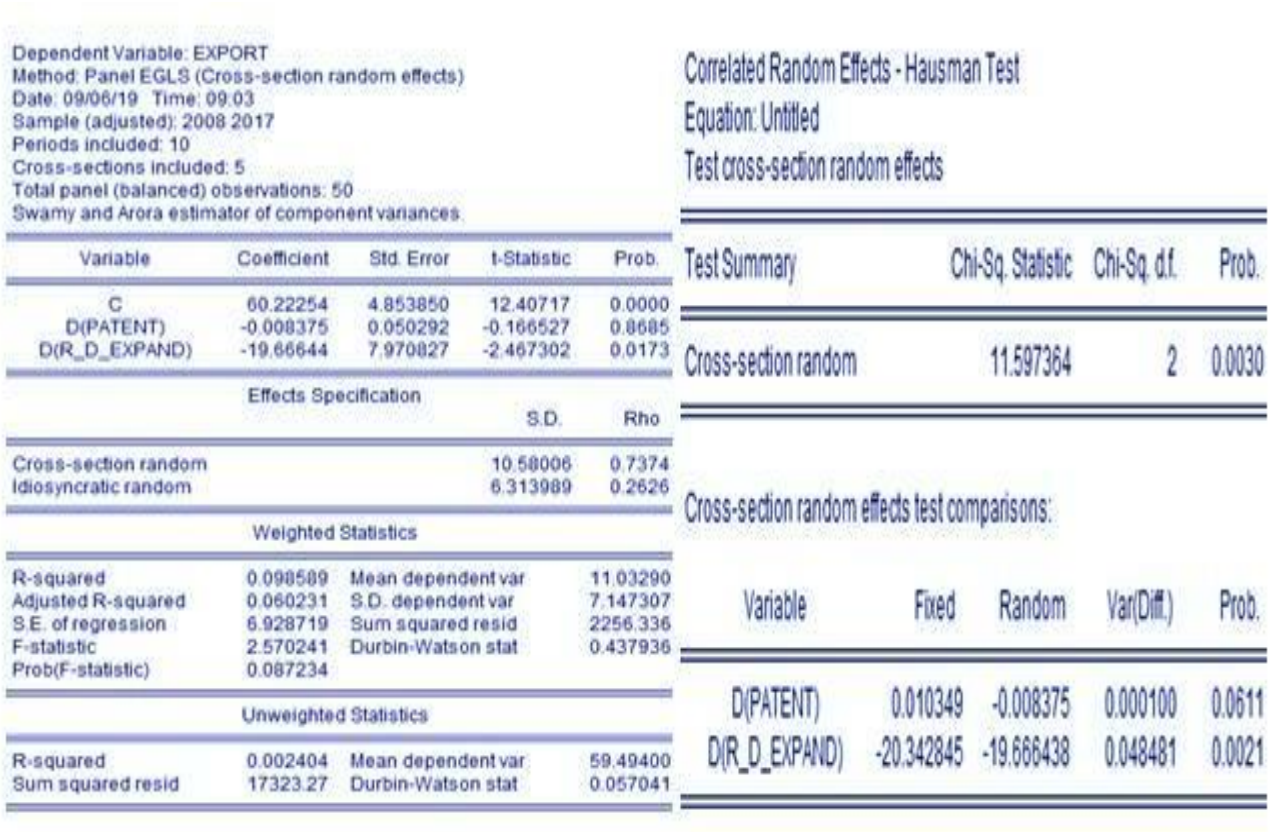
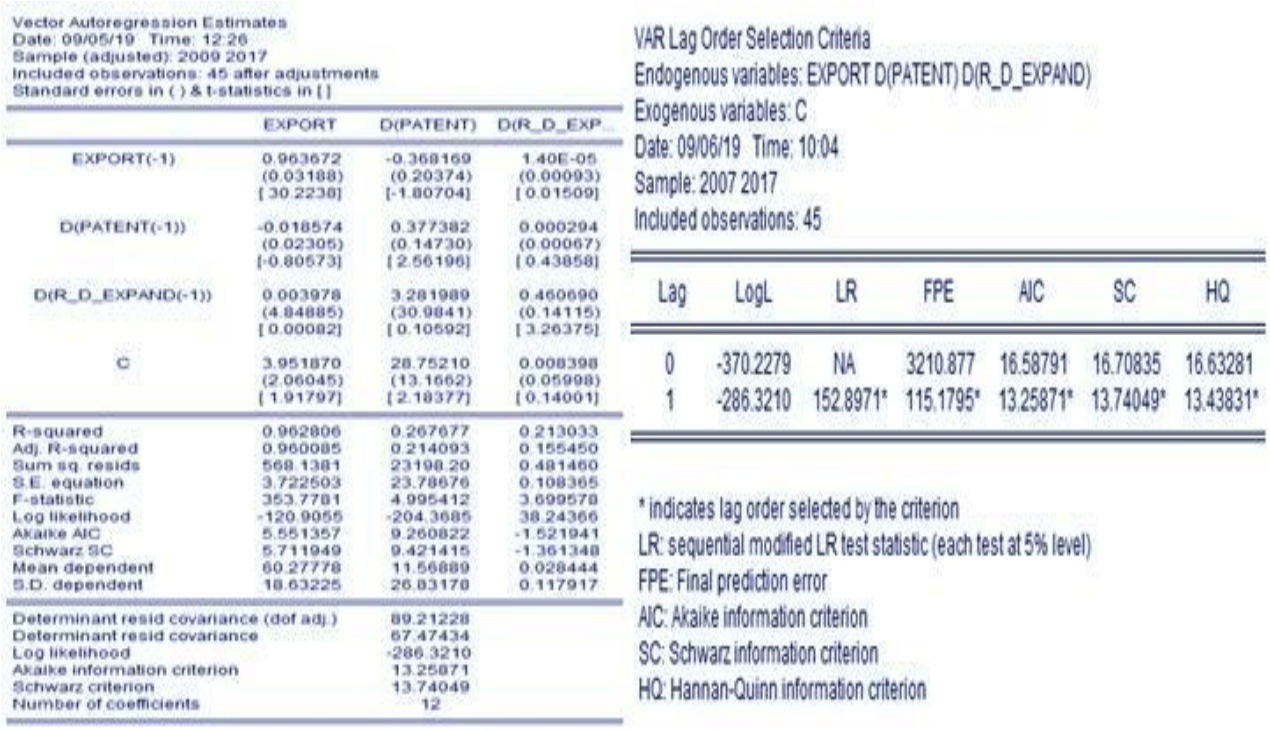

Dependent Variable: EXPORT
Method: Panel EGLS (Cross-section random effects)
Date: 09/06/19 Time: 09:03
Sample (adjusted): 2008 2017
Periods included: 10
Cross-sections included: 5
Total panel (balanced) observations: 50
Swamy and Arora estimator of component variances
Variable Coefficient Std. Error t-Statistic Prob.
C 60.22254 4.853850 12.40717 0.0000
D(PATENT) -0.008375 0.050292 -0.166527 0.8685
D(R_D_EXPAND) -19.66644 7.970827 -2.467302 0.0173
Effects Specification
S.D. Rho
Cross-section random 10.58006 0.7374
Idiosyncratic random 6.313989 0.2626
Weighted Statistics
R-squared 0.098589 Mean dependent var 11.03290
Adjusted R-squared 0.060231 S.D. dependent var 7.147307
S.E. of regression 6.928719 Sum squared resid 2256.336
F-statistic 2.570241 Durbin-Watson stat 0.437936
Prob(F-statistic) 0.087234
Unweighted Statistics
R-squared 0.002404 Mean dependent var 59.49400
Sum squared resid 17323.27 Durbin-Watson stat 0.057041
Correlated Random Effects - Hausman Test
Equation: Untitled
Test cross-section random effects
Test Summary Chi-Sq. Statistic Chi-Sq. d.f. Prob.
Cross-section random 11.597364 2 0.0030
Cross-section random effects test comparisons:
Variable Fixed Random Var(Diff.) Prob.
D(PATENT) 0.010349 -0.008375 0.000100 0.0611
D(R_D_EXPAND) -20.342845 -19.666438 0.048481 0.0021

Figure 1 – The random effects model

Source: the author

We also built a VAR model in stationary data panel and identified the optimum lag according to Figure 2.



Vector Autoregression Estimates
Date: 09/05/19 Time: 12:26
Sample (adjusted): 2009 2017
Included observations: 45 after adjustments
Standard errors in ( ) & t-statistics in [ ]

	EXPORT	D(PATENT)	D(R_D_EXP...
EXPORT(-1)	0.963672	-0.368169	1.40E-05
	(0.03188)	(0.20374)	(0.00093)
	[30.2238]	[-1.80704]	[0.01509]
D(PATENT(-1))	-0.018574	0.377382	0.000294
	(0.02305)	(0.14730)	(0.00067)
	[-0.80573]	[2.56196]	[0.43858]
D(R_D_EXPAND(-1))	0.003978	3.281989	0.460690
	(4.84885)	(30.9841)	(0.14115)
	[0.00082]	[0.10592]	[3.26375]
C	3.951870	28.75210	0.008398
	(2.06045)	(13.1662)	(0.05998)
	[1.91797]	[2.18377]	[0.14001]
R-squared	0.962806	0.267677	0.213033
Adj. R-squared	0.960085	0.214093	0.155450
Sum sq. resids	568.1381	23198.20	0.481460
S.E. equation	3.722503	23.78676	0.108365
F-statistic	353.7781	4.995412	3.699578
Log likelihood	-120.9055	-204.3685	38.24366
Akaike AIC	5.551357	9.260822	-1.521941
Schwarz SC	5.711949	9.421415	-1.361348
Mean dependent	60.27778	11.56889	0.028444
S.D. dependent	18.63225	26.83178	0.117917
Determinant resid covariance (dof adj.)		89.21228	
Determinant resid covariance		67.47434	
Log likelihood		-286.3210	
Akaike information criterion		13.25871	
Schwarz criterion		13.74049	
Number of coefficients		12	

VAR Lag Order Selection Criteria
Endogenous variables: EXPORT D(PATENT) D(R_D_EXPAND)
Exogenous variables: C
Date: 09/06/19 Time: 10:04
Sample: 2007 2017
Included observations: 45

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-370.2279	NA	3210.877	16.58791	16.70835	16.63281
1	-286.3210	152.8971*	115.1795*	13.25871*	13.74049*	13.43831*

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

Figure 2 – VAR estimation and lag selection criterion

Source: the author

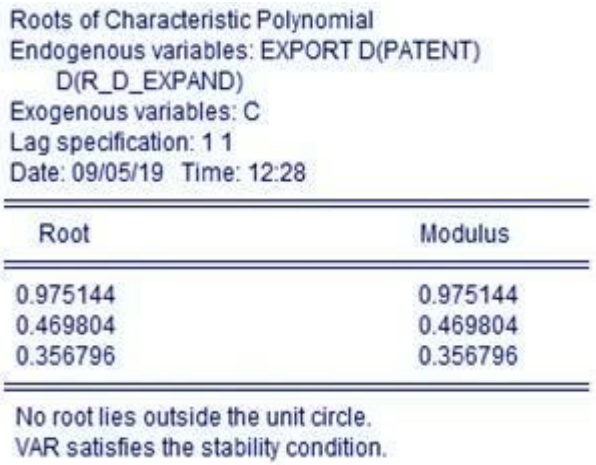
The following equations resulted from the estimation of the VAR model in the panel:

$$EXPORT = 0.96367245979*EXPORT(-1) - 0.0185736046631*D(PATENT(-1)) + 0.00397750355298*D(R\_D\_EXPAND(-1)) + 3.95186994867$$

$$D(PATENT) = - 0.368169425651*EXPORT(-1) + 0.377381865997*D(PATENT(-1)) + 3.28198884607*D(R\_D\_EXPAND(-1)) + 28.7521032071$$

$$D(R\_D\_EXPAND) = 1.40084271054e-05*EXPORT(-1) + 0.000294314536653*D(PATENT(-1)) + 0.460690069954*D(R\_D\_EXPAND(-1)) + 0.008397878288$$

The model satisfies the conditions of stability, the polynomial roots of the autoregressive process being inside the unit circle, as can be seen in Figure 3.



Roots of Characteristic Polynomial
Endogenous variables: EXPORT D(PATENT) D(R_D_EXPAND)
Exogenous variables: C
Lag specification: 1 1
Date: 09/05/19 Time: 12:28

Root	Modulus
0.975144	0.975144
0.469804	0.469804
0.356796	0.356796

No root lies outside the unit circle.
VAR satisfies the stability condition.

Figure 3 – The roots of the polynomial

Source: the author

Granger causality analysis shows that the change of the share of R&D expenditures is a cause for the change of the export of goods and services (significance level greater than 5%) and the hypothesis of homoscedasticity is confirmed by the p value 0,1516, greater than 0, 05 (see Figure 4).

VAR Granger Causality/Block Exogeneity Wald Tests
Date: 09/05/19 Time: 12:35
Sample: 2007 2017
Included observations: 45

Dependent variable: EXPORT

Excluded	Chi-sq	df	Prob.
D(PATENT)	0.649193	1	0.4204
D(R_D_EXPAND)	6.73E-07	1	0.9993
All	0.651251	2	0.7221

Dependent variable: D(PATENT)

Excluded	Chi-sq	df	Prob.
EXPORT	3.265379	1	0.0708
D(R_D_EXPAND)	0.011220	1	0.9156
All	3.278315	2	0.1941

Dependent variable: D(R_D_EXPAND)

Excluded	Chi-sq	df	Prob.
EXPORT	0.000228	1	0.9880
D(PATENT)	0.192353	1	0.6610
All	0.214077	2	0.8985

VAR Residual Heteroskedasticity Tests (Levels and Squares)
Date: 09/05/19 Time: 12:40
Sample: 2007 2017
Included observations: 45

Joint test:

Chi-sq	df	Prob.
44.69708	36	0.1516

Individual components:

Dependent	R-squared	F(6,38)	Prob.	Chi-sq(6)	Prob.
res1*res1	0.112382	0.801871	0.5747	5.057208	0.5365
res2*res2	0.121613	0.876850	0.5210	5.472575	0.4848
res3*res3	0.275101	2.403514	0.0456	12.37954	0.0540
res2*res1	0.100687	0.709080	0.6443	4.530918	0.6052
res3*res1	0.205880	1.641954	0.1624	9.264609	0.1592
res3*res2	0.128368	0.932733	0.4829	5.776577	0.4487

Figure 4 – Granger heteroscedasticity test and causality

Source: the author

According to the figure below, there is no autocorrelation of the errors until lag 10 (LM Test) and their distribution is not of the normal type (Jarque-Bera Test).

VAR Residual Serial Correlation LM Tests
Date: 09/05/19 Time: 12:44
Sample: 2007 2017
Included observations: 45

Null hypothesis: No serial correlation at lag h

Lag	LRE* stat	df	Prob.	Rao F-stat	df	Prob.
1	6.160763	9	0.7237	0.681004	(9, 87.8)	0.7241
2	6.272897	9	0.7123	0.693830	(9, 87.8)	0.7127
3	3.430234	9	0.9448	0.373496	(9, 87.8)	0.9449
4	11.38864	9	0.2500	1.296060	(9, 87.8)	0.2506
5	16.15772	9	0.0637	1.888713	(9, 87.8)	0.0640
6	10.14684	9	0.3387	1.146757	(9, 87.8)	0.3393
7	14.75836	9	0.0978	1.711593	(9, 87.8)	0.0982
8	6.978830	9	0.6393	0.774939	(9, 87.8)	0.6398
9	15.82798	9	0.0706	1.846731	(9, 87.8)	0.0709
10	11.88637	9	0.2198	1.356475	(9, 87.8)	0.2203

Null hypothesis: No serial correlation at lags 1 to h

VAR Residual Normality Tests
Orthogonalization: Cholesky (Lutkepohl)
Null Hypothesis: Residuals are multivariate normal
Date: 09/05/19 Time: 12:50
Sample: 2007 2017
Included observations: 45

Component	Skewness	Chi-sq	df	Prob.*
1	-1.044170	8.177183	1	0.0042
2	0.629569	2.972677	1	0.0847
3	-0.160269	0.192645	1	0.6607
Joint		11.34251	3	0.0100

Component	Kurtosis	Chi-sq	df	Prob.
1	5.604451	12.71844	1	0.0004
2	5.807558	14.77947	1	0.0001
3	3.361500	0.245030	1	0.6206
Joint		27.74293	3	0.0000

Component	Jarque-Bera	df	Prob.
1	20.89562	2	0.0000
2	17.75214	2	0.0001
3	0.437675	2	0.8035
Joint	39.08544	6	0.0000

*Approximate p-values do not account for coefficient estimation

Figure 5 – Autocorrelation and error distribution tests

Source: the author

The analysis of the impulse functions (see Figure 6) shows that at a shock in changing the share of R&D expenditures, respectively of the number of patent applications, the export of goods and services changes.

Also, from the decomposition by variance of the variables, it turns out that after two shock periods, 6.98% of the variation in the change of the export of goods and services is due to the change in the share of R&D expenditures.

Gradually, however, the influence decreases as the distance from the moment of shock is less than the influence on the export of goods and services given by the change in the number of patent applications.

Variance Decomposition of EXPORT:

Period	S.E.	EXPORT	D(PATENT)	D(R_D_EX...
1	3.722503	100.0000	0.000000	0.000000
2	5.140367	99.27951	0.720490	6.98E-07
3	6.185278	98.60673	1.393179	9.37E-05
4	7.034521	98.12104	1.878636	0.000325
5	7.755841	97.78127	2.218125	0.000605
6	8.384262	97.53899	2.460139	0.000872
7	8.940922	97.36072	2.638178	0.001102
8	9.439846	97.22532	2.773385	0.001293
9	9.890957	97.11953	2.879021	0.001450
10	10.30161	97.03485	2.963575	0.001578

Variance Decomposition of D(PATENT):

Period	S.E.	EXPORT	D(PATENT)	D(R_D_EX...
1	23.78676	2.459826	97.54017	0.000000
2	25.39208	2.158651	97.82186	0.019488
3	25.67220	2.367877	97.59968	0.032442
4	25.77997	2.804687	97.15772	0.037593
5	25.86167	3.310814	96.64999	0.039194
6	25.93664	3.821962	96.13847	0.039566
7	26.00747	4.315493	95.64495	0.039557
8	26.07465	4.784525	95.17604	0.039436
9	26.13837	5.227790	94.73292	0.039285
10	26.19883	5.645944	94.31493	0.039129

Variance Decomposition of D(R_D_EXPAND):

Period	S.E.	EXPORT	D(PATENT)	D(R_D_EX...
1	0.108365	0.534856	0.125039	99.34011
2	0.119584	0.482941	0.629469	98.88759
3	0.121965	0.472397	0.898445	98.62916
4	0.122504	0.472968	1.001297	98.52573
5	0.122630	0.476845	1.035401	98.48775
6	0.122662	0.481971	1.046301	98.47173
7	0.122673	0.487591	1.049958	98.46245
8	0.122679	0.493333	1.051350	98.45532
9	0.122683	0.498999	1.051987	98.44901
10	0.122687	0.504490	1.052345	98.44316

Cholesky Ordering: EXPORT D(PATENT) D(R_D_EXPAND)

.Figure 6 – Analysis of impulse functions and decomposition of the forecast error dispersion

Source: the author

Conclusions

The engine of the European Union's strategy for economic growth is innovation, with member countries being encouraged to invest in the R&D sector up to 3% of gross domestic product, by 2020.

In a less developed economy, the strong intensification of the investment in R&D, the diffusion and the technological transfer represent a safe way to reduce the significant gaps and to ensure the economic growth.

There are numerous studies on the relationship between the R&D sector and the export of goods and services, one of the determinants of economic growth, but, nevertheless, the results are not always conclusive.

This article assesses whether, in the case of modest innovators where exports are the engine of economic growth, despite a noticeable gap in investment in R&D, innovation has a positive impact on export performance.

The EViews test application confirms that there is a complementarity between R&D expenditures, the number of patent applications and the export of goods and services, which means that intensifying R&D activities will lead to increased export

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ARTIFICIAL INTELLIGENCE, A KEY INSTRUMENT IN THE ARCHITECTURE OF FINANCIAL SERVICES AT LOCAL AND GLOBAL LEVEL

Ph.D. Manta P. Elena Otilia[67]

Abstract:

The big challenges at the global level are found today in our daily life, which confirms that we are no longer under the direct influence only of the decisions at the local level but we are predominantly under the decisions at the global level, especially when we talk about financial services markets. In this context of the challenges we can say that we are in the redefinition of services, tools and not least the architecture of financial markets. Within these challenges and with a direct impact on the financial services architecture, it is artificial intelligence. Arthur Bachinskiy presented in his paper The Growing Impact of AI in Financial Services: Six Examples, these six examples of the implication of artificial intelligence in finance, respectively: AI and Credit Decisions; AI and risk management; AI and fraud prevention; AI and trade; AI and Custom Bank; AI and process automation.

In this global context, identifying the instruments for accessing financial resources, especially for those in need, is not only a priority for new economic researchers, but also a challenge in defining the architecture of financial markets, respectively identifying financial instruments, mechanisms and of financial means to ensure the sustainability of the company, respectively of social and financial inclusion.

Keywords: *artificial intelligence, financial markets, globalization and sustainable development.*

JEL Classification*: E44, F65, O31*

Introduction

We are now witnessing the great challenges at the global level, which are presently found in our daily lives, which confirms that local decisions no longer directly influence us, but we are dominated by global decisions, with all the more so when we discuss the market and the global financial services networks are subject to international regulations. In this context of current challenges we can say that we are in the stage of identifying and redefining new services, tools and not least the current architecture of financial markets. Within these great challenges and with a direct impact on the new architecture of financial services, it is artificial intelligence. Arthur Bachinskiy presented in his paper "*The Growing Impact of AI in Financial Services: Six Examples*", these six examples of the implication of artificial intelligence in finance, respectively: *AI and Credit decisions*; *AI and risk management*; *AI and fraud prevention*; *AI and trade*; *AI and custom bank*; *AI and process automation.*

In this global context, *identifying the tools and mechanisms for accessing financial resources,* especially for those in need, is not only a priority for new researchers in the economic field, but also a challenge in defining the new architecture of financial markets, respectively identifying financial instruments, mechanisms and financial means to ensure societal sustainability, respectively social, economic and financial inclusion. In many advanced economies, the great challenges are due to the growing inequalities between the poor and the rich, between those with resources and those without resources, but especially the impact of technological and climate change on economies, "*the complex impact of globalization - including those related to trade in goods, services and data, and the movement of people and capital. In emerging economies, the sharp decline in poverty and the rise of the middle class have fuelled better aspirations and*

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demands for better public goods; these requirements are now facing slower growth and tightening of government budgets. The order resulting from the adversity principle has produced an economic, financial and ideological polarization. The state we are in is one in which one (state) controls the whole (globe), manages discretionary global powers, exercises unilaterally of decisions and favours levelling diversity (including financial). In this global context, identifying the financial resources to support those who have need is not only a priori for new economic researchers, but also a challenge in identifying financial instruments, mechanisms and financial means to ensure the sustainability of societyy[68] .

Research methodology

The *methodology of the paper* will have as direct instruments the collection of data and information from the literature and from the existing practice in public and private institutions, but especially scientific articles published on specialized research networks (Research Gate, Academia.edu, etc.), articles published in different journals, relevant books in the field of reference, legislation, analyses and studies, official documents of various tax bodies, tax documents and interactive database of the Federal Banks and Central Banks, other relevant sources identified at the libraries Romanian Academy, National Bank of Romania, National and International Library, etc. Moreover, in the methodology we will analyse the documents using the comparative, analytical, descriptive method, no participative and participatory observation, and the use of a set of informational sources, the collection of financial data in the established databases. Also, the paper will be based on annual reports, publications, consolidated statistical data provided by the Federal Banks, the European Central Bank (ECB), the International Settlement Bank (BRI), World Bank, World Economic Forum, CGAP, CFI, the European Commission, OECD, published annually, data to be processed in order to be able to provide a general and analytical picture of the most important changes taking place in the globally - considered representative for the understanding of the phenomena studied.

Literature review

The advancement of financial technologies includes robotic financial trading, payments made through encrypted cashless platforms, crowdfunding financial platforms, financial consulting, technical and robotic assistance through virtual space, and not least virtual currencies so developed lately. "The value of FinTech's global investment in 2015 increased by $ 22.3 billion by 75%. Corporations, venture capital and private equity firms have invested more than $ 50 billion in nearly 2,500 FinTech companies globally since 2010 "(Financial technology (FinTech): Prospects and challenges for the EU, EPRS, Cemal Karakas, Carla Stamegna - Graphics: Christian Dietrich, 2018). However, financial technologies (FinTech), although registering a rapid growth in the virtual space, have positive aspects, especially regarding the speed with which the financial services (adapted and flexible) reach the many financially excluded, but also have risks, challenges such as be especially the data and consumer protection issues, the risk of increasing financial volatility, as well as the alarming increase of cyber-crime). The risks in particular attract the attention of the financial services regulators, and a Financial Technology Task Force (FTTF) has been set up at the European Commission, which together with the European Parliament's Committee on Monetary Affairs (ECON) made the FinTech report published in January 2017. At the global level, respectively the G20, the Financial Stability Committee (FSB) presented the report on FinTech in July 2017. The concerns at global and European level were transposed into discussions / topics / conferences and regulatory initiatives, at national level.
The defining elements for any financing model, regardless of whether we think of fintech or other types, are given by the following characteristics: *digitization* (artificial intelligence tools are crucial for digitizing services), *mobilization* (virtual space offers not only the possibility but especially the platform of realization of the mobility of people and services), *disintermediation* (virtual space offers the possibility of direct access without intermediaries), *automation* (through the financial services

[68] *The Growing Impact of AI in Financial Services: Six Examples*
https://towardsdatascience.com/the-growing-impact-of-ai-in-financial-services-six-examples-da386c0301b2

existing on the online platforms, the client and the service provider optimize their time and cost in favour of making the service profitable).
Following the widespread use of FinTech, the authorities dealing with the regulation of financial services, may face a dilemma: one based on very clear but limited rules, the regulatory frameworks clearly establish the compliance obligations of the institutions involved in financial technologies, but these are often costly from the perspective of a start-up company and could be an obstacle to innovation and the creation of new jobs; Principle-based financial regulation is more flexible, but could create some uncertainty about exactly what is expected from the point of view of compliance by those who use the services of Fintech institutions.

Figure 1 Representation of Financial Technologies (FinTech)

Source: Financial technology (FinTech): Prospects and challenges for the EU, EPRS, Cemal Karakas, Carla Stamegna, 2018

Definition of concepts according to **financial technology (FinTech):** Prospects and challenges for the EU, EPRS, Cemal Karakas, Carla Stamegna, 2018:
Blockchain: a decentralised digital ledger of economic transactions that can be programmed to record financial transactions (and more) by allowing digital information to be distributed but not copied or changed. Data packages, 'blocks', are stored in a linear chain. This technology was originally devised for the digital currency Bitcoin, but today presents other potential uses.
Crowdfunding: the use of capital from several individuals (via social media and specialised websites) to finance a business project. It allows start-up companies to raise money without giving up control to venture capital investors. In return, it often offers investors the opportunity to acquire an equity position. Critics of crowdfunding argue that funds may, for instance, be used for different purposes than those initially disclosed, or that tax laws governing e-commerce are not clearly defined, e.g. in the case of cross-border funding.
Distributed ledger: a database that is consensually shared and synchronised across multiple sites, institutions or locations. It allows transactions to have public witnesses, making cyberattacks more difficult. The participant at each node of the network can access the recordings shared. Changes or additions made to the ledger are copied to all participants.
Peer-to-peer (P2P) lending: a method of debt financing without the use of an official financial institution as an intermediary. It can also be described as 'social lending'.
Robo-advice: covers a broad spectrum of services, but essentially involves replacing face-to face investment advice with online, automated guidance and execution. It does not involve actual robots, but rather relies on algorithms or online offerings to invest money. Potentially, robo-advice could deliver financial advice in a more cost-efficient way, making it affordable for a wider range of investors and reducing the financial advice gap.

Robo-trading: a form of automated stock trading. The best known kind of robo-trading is algorithmic trading, also referred to as algo-trading and black box trading, which is a trading system that utilises advanced and complex mathematical models and formulas to make high speed decisions and transactions in the financial markets. Algorithmic trading involves the use of computer programs and algorithms to determine trading strategies for optimal returns.
Virtual currencies: digital representations of value issued by private developers and denominated in their own unit of account. They can be obtained, stored, accessed, and transacted electronically, and can be used for a variety of purposes, as long as the transacting parties agree to use them. The concept of virtual currencies covers a wider array, including internet coupons, airline miles, and crypto currencies such as Bitcoin.
The current process of financial technologies and the definition of financing models start primarily with the contribution of digital technologies to the development of the financial industry, as can be seen in the graph below.

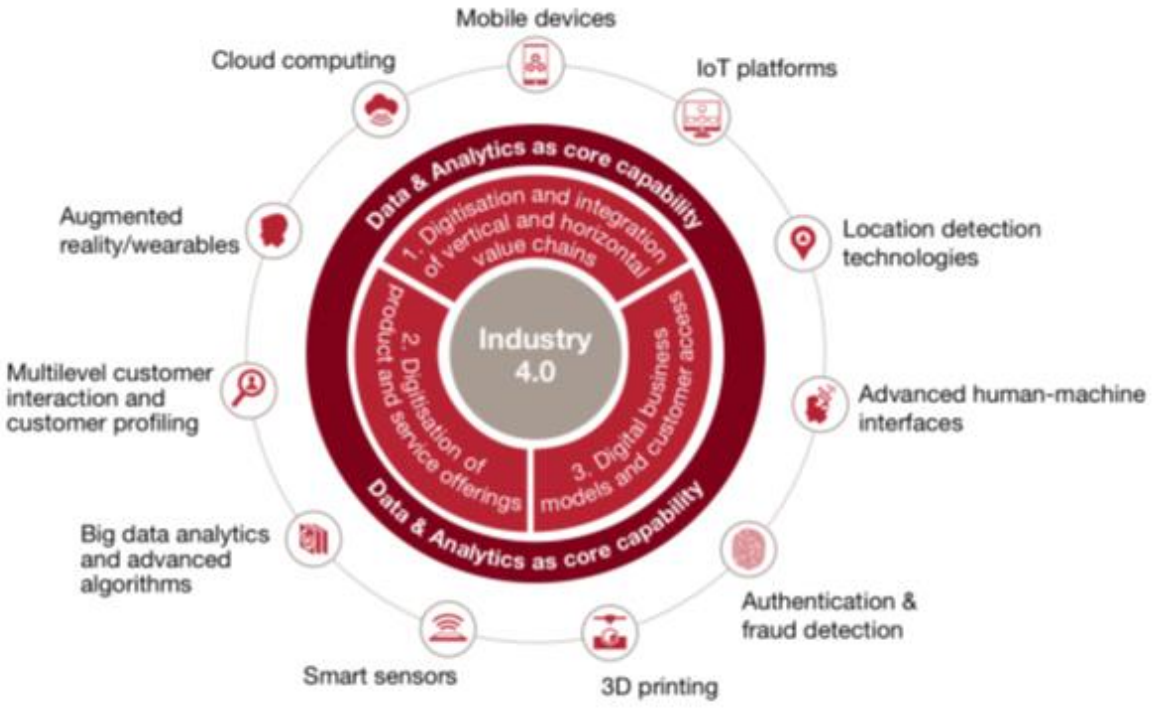

Mobile devices
Cloud computing
IoT platforms
Augmented reality/wearables
Location detection technologies
Multilevel customer interaction and customer profiling
Advanced human-machine interfaces
Big data analytics and advanced algorithms
Authentication & fraud detection
Smart sensors
3D printing
Data & Analytics as core capability
1. Digitisation and integration of vertical and horizontal value chains
2. Digitisation of product and service offerings
3. Digital business models and customer access
Industry 4.0
Data & Analytics as core capability

Figure 2. Industry 4.0. Framework and contributing digital technologies

Source: PwC report, 2019

The ***process of globalization*** inevitably leads to the reconsideration (conceptual reconstruction) of the paradigm of growth and economic development, and especially in financial technology (Fintech). The challenge, on the one hand, of the depletion and / or deterioration of resources (especially natural) and, on the other hand, of our optimization model - maximizing the objective functions of economic actors - is likely to require a radical change the options and the means by which we address this important activity of the individual and society: economic activity.
At the same time, it is obvious that economic activity can no longer be regarded in itself as a mode governed by a distinct rationality distinct from others, rationality based on a consistent and sufficient logic. Logic and economic rationality must accept, under the pressure of global problems, a permanent and fundamental communication with the other logic of individual and social behaviour (praxis). In addition, they must accept the possibility and desirability of re-evaluations, repositions, or even refunds, in light of the new paradigms of the economic process (including paradigms, for the time being, academic, such as the entropic model).
Sustainable development (or growth) is a direct function of resources of the same category, i.e. sustainable resources, inclusive financial resources. The subject of this study is the research of a special resource, namely the financial technology (FinTech).

Studying this resource from a sustainable development perspective will lead us to the proposal and the conceptual, methodological and technological development of what we will call a sustainable financial resource. For its part, the concept of a sustainable financial resource will generate some considerations about the sustainable sources of financial resources, including Fintech - our ultimate goal, on the other hand. As we develop more broadly at the right time, the financial sources for sustainable development are more sustainable financial sources for development. This is not just a game of words but an emphasis on an extremely important idea, namely the idea that points to the depth of the sustainability feature.
Since, as will be demonstrated, the financial resource (and, as a consequence, the source of the FinTech resource) is one of the foundations of any economic process, it is natural that our attention goes to ensuring this foundation in terms of sustainability in order to be able to speak with some justification and confidence about sustainable economic processes (systems).

Research results

In our research there is a constant increase of artificial intelligence in the financial industry, which shows us how quickly the business landscape changes, even in areas where traditional finance has remained conservative. The most popular examples regarding the involvement of artificial intelligence in finance were mentioned this year by Arthur Bachinskiy. Here are just a few of the most popular examples of AI in finance (Arthur Bachinskiy, 2019).
1. Influence of lending decisions through artificial intelligence decisions
Artificial intelligence offers a faster and more accurate assessment of a potential borrower, with lower costs and represents a wider variety of factors, leading to a better informed, data-driven decision. The credit score offered by AI is based on more complex and sophisticated rules compared to those used in traditional credit scoring systems. It helps creditors distinguish between high-risk applicants and those who are credit worthy, but do not have an extended credit history (*Arthur Bachinskiy, 2019*). Objectivity is another benefit of the mechanism fuelled by AI. Unlike a human being, a car is unlikely to be biased.
Digital banks and lending applications use machine learning algorithms to use alternative data (for example, smartphone data) to evaluate loan eligibility and to provide customized options. US auto lending companies have also reported success to AI for their needs. For example, this report shows that bringing AI on board reduces losses by 23% annually.
2*. The direct link between risk management and artificial intelligence* - it is difficult to overestimate the impact of AI on financial services when it comes to risk management. The enormous processing power allows the handling of large amounts of data in a short time, and the cognitive calculation helps to manage both structured and unstructured data, a task that would take too long for a human.
The algorithms analyse the history of risk cases and identify early signs of potential future problems. Artificial intelligence in finance is a powerful ally when it comes to analysing real-time activities in any given market or environment; the accurate forecasts and detailed forecasts they provide are based on several variables and essential for business planning.
3. The role of artificial intelligence in preventing fraud in the financial-banking field
In recent years, artificial intelligence has been very successful in combating financial fraud - and the future looks brighter every year, as machine learning is approaching criminals. AI is particularly effective for preventing credit card fraud, which has grown exponentially in recent years due to the growth of e-commerce and online transactions.
Fraud detection systems analyse customers' behaviour, location and purchasing habits and trigger a security mechanism when something seems inconsistent and contradicts the established spending pattern. Banks also use artificial intelligence to reveal and prevent another infamous type of financial crime: money laundering. The cars recognize the suspicious activity and help reduce the costs of investigating the alleged money laundering schemes. A case study reported a 20% reduction in investigative work volume (Arthur Bachinskiy, 2019).
4. The impact of artificial intelligence on trade
Data-driven investments have grown steadily over the past 5 years and closed by $ 1 trillion in 2018. They are also called algorithmic, quantitative or high frequency transactions. This type of trading has expanded rapidly in the stock markets of the world and, for one reason: artificial intelligence offers multiple significant benefits.

Intelligent trading systems monitor both structured data (databases, spread sheets, etc.) and unstructured data (social media, news, etc.) in a fraction of the time it takes for people to process it. And nowhere does it say "time is money" more true than in trading: faster processing means faster decisions, which in turn means faster transactions.

5. The direct link between artificial intelligence and personalized financial institution

Artificial intelligence really shines when it comes to exploring new ways to provide additional benefits and comfort to individual users. In the banking sector, AI provides smart chatbots that offer customers complete self-help solutions, while reducing call centre workload. Voice-controlled, virtual assistants powered by smart technology, such as Amazon's Amazon, gain traction and speed, which is not surprising: they pride themselves on a self-education function, become smarter every day, so you should expect extraordinary improvements here. Both tools can check balances, schedule payments, search for account activity, and more.

A number of applications offer personalized financial advice and help individuals achieve their financial goals. These smart systems track incomes, recurring expenses and spending habits and come up with an optimized plan and financial advice. The largest banks in the US, such as Wells Fargo, Bank of America and Chase, have launched mobile banking applications that provide customers with reminders to pay bills, plan expenses and interact with their bank in a way easier and more efficient, from obtaining information to completing transactions.

6. The impact of artificial intelligence on process automation

Industry leaders who are thinking about the future are pursuing the automation of robotic processes when they want to reduce operational costs and increase productivity.

Intelligent character recognition makes it possible to automate a variety of time-consuming, time-consuming tasks that have taken thousands of hours of work and inflating wages.

The software activated on artificial intelligence verifies the data and generates reports according to the indicated parameters, examines the documents and extracts information from the forms (applications, agreements, etc.). The use of robotic process automation for high-frequency repetitive tasks eliminates the room for human error and allows a financial institution to reorient labour efforts in processes that require human involvement. Ernst & Young reported a 50% -70% cost reduction for these types of tasks, and Forbes calls it "*Gateway Drug to Digital Transformation" (Arthur Bachinskiy, 2019).*

A leading financial company, JP Morgan Chase, has been successful for some time with Robotic Process Automation (RPA) to perform tasks such as extracting data, complying with customer knowledge and capturing documents. RPA is one of the "five emerging technologies" that JP Morgan Chase uses to improve the cash management process.

Financing tools and mechanisms directly influenced by artificial intelligence have the following specific attributes, respectively: digitization, mobilization, augmentation, disintermediation, automation[69].

[69] *YouTube; Digital transformation: are you ready for exponential change? Futurist Gerd Leonhard, TFAStudios*

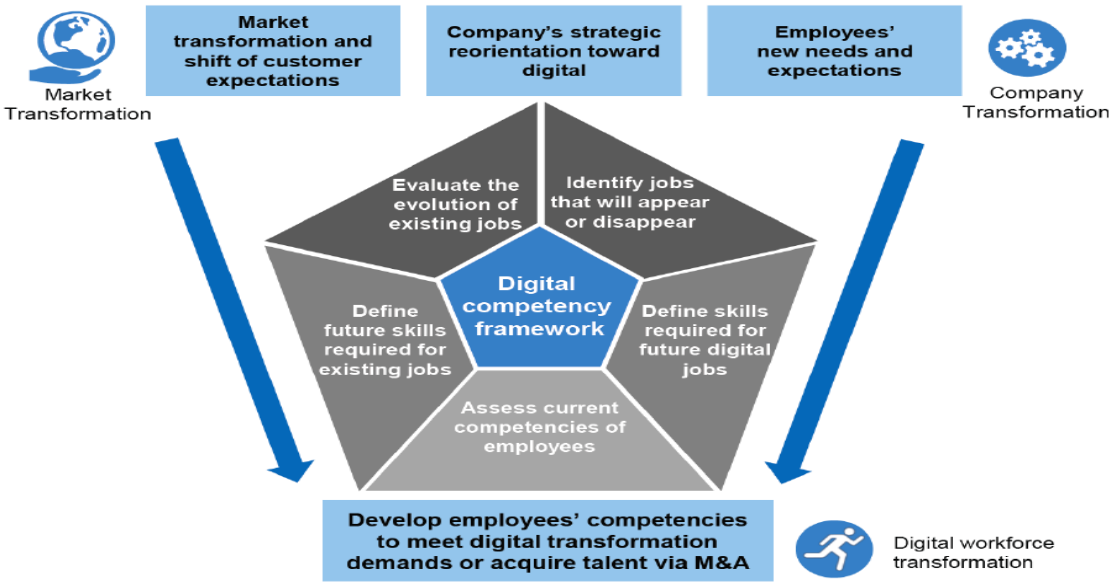

Market Transformation
Market transformation and shift of customer expectations
Company's strategic reorientation toward digital
Employees' new needs and expectations
Company Transformation
Evaluate the evolution of existing jobs
Identify jobs that will appear or disappear
Digital competency framework
Define future skills required for existing jobs
Define skills required for future digital jobs
Assess current competencies of employees
Develop employees' competencies to meet digital transformation demands or acquire talent via M&A
Digital workforce transformation

Figure no.3. Digital competency framework

Source: Accenture, 2018

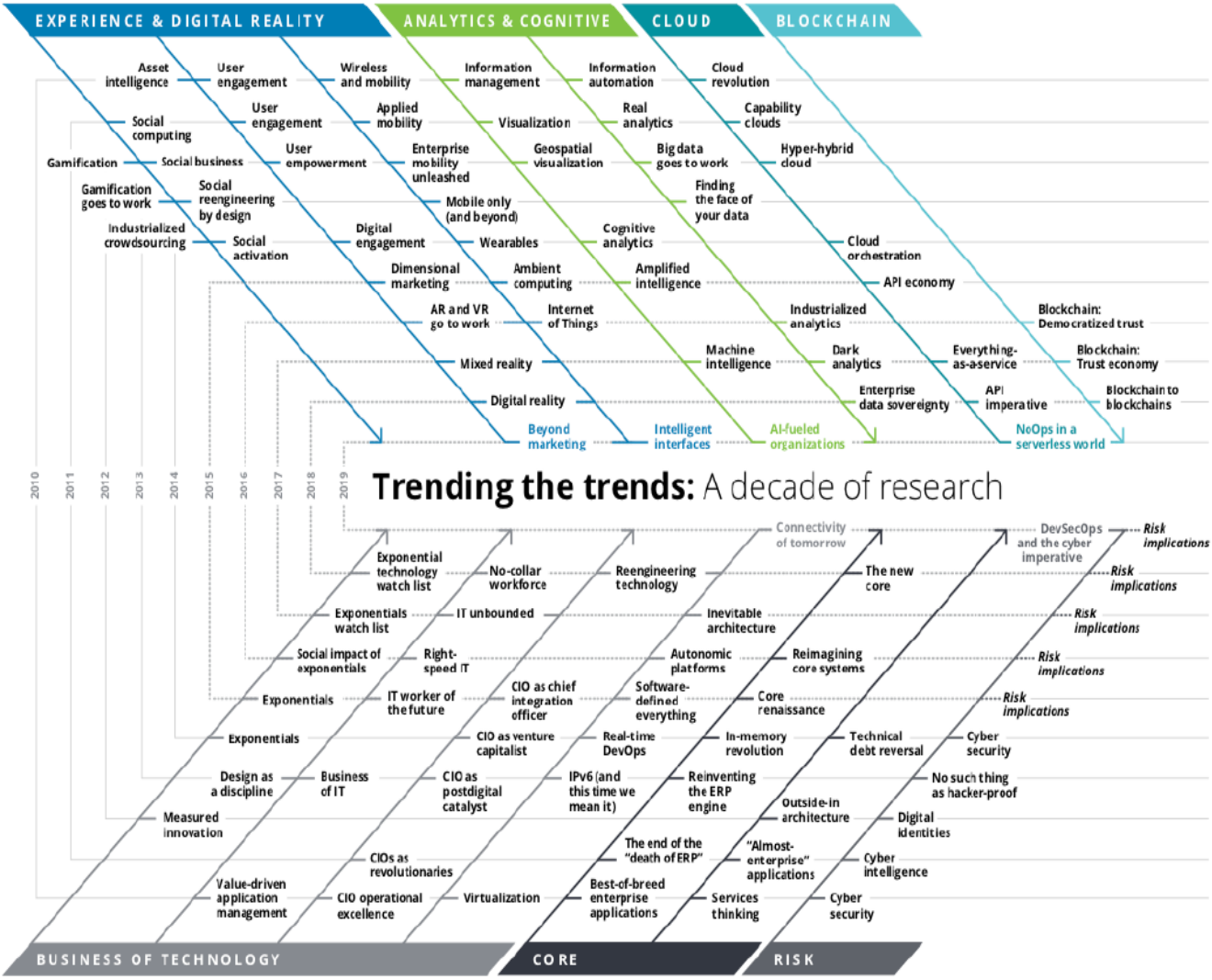


Figure 4. Current trends of research with impact on finances

Source: Prof. Adrian Curaj, research paper2040 Quo Vadis Romania?, 2019

In order to be able to develop financial instruments and mechanisms in line with current trends globally and under the direct influence of artificial intelligence, we believe that adapting to current digital financial technologies and creating models using them is the basic pillar in the development of the new architectures of financial services connected on the one hand to the real needs of the society, but especially connected to the global trends as they are reflected in the figure above.

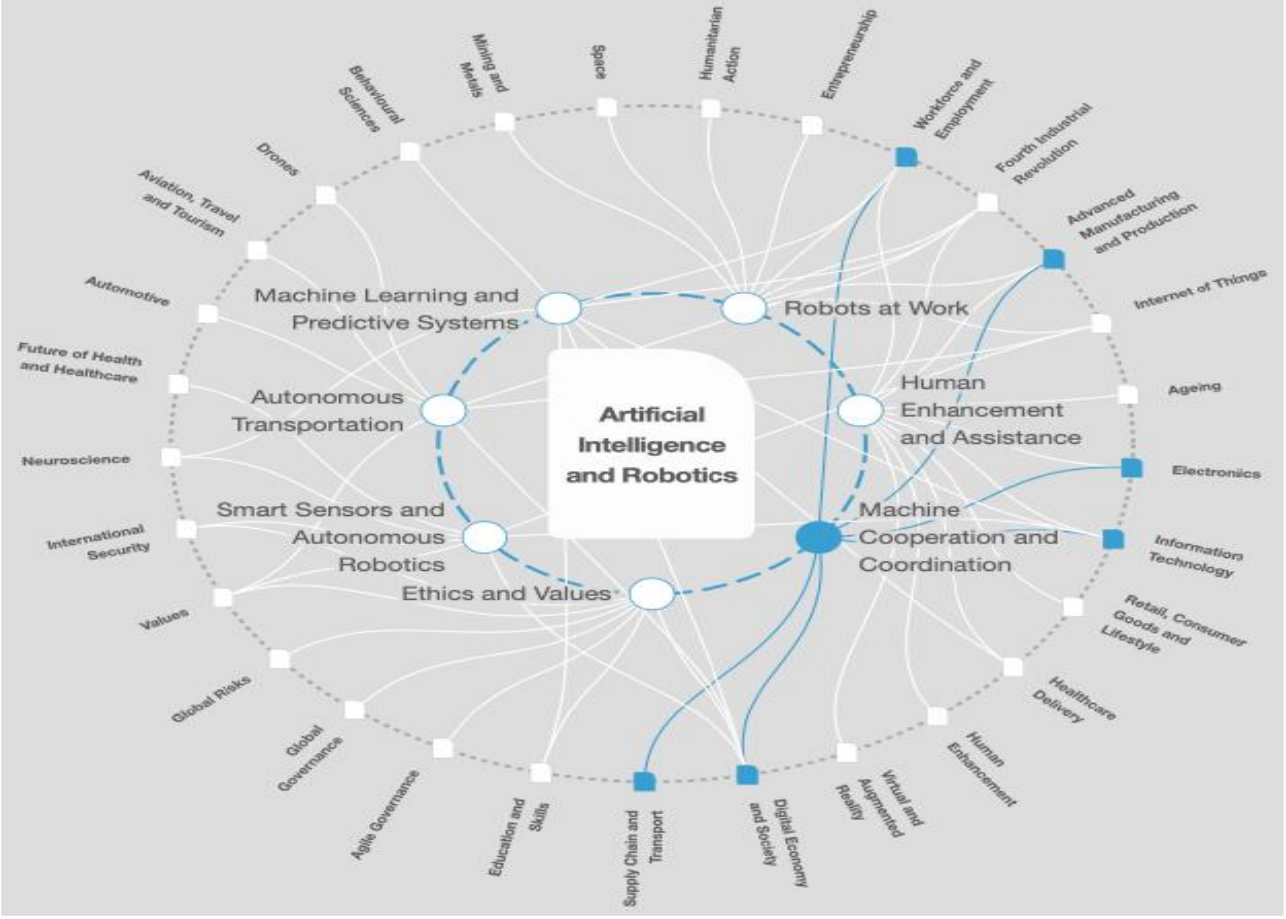


Figure 5. Artificial Intelligence and Robotics

Source: World Economic Forum, 2019

Between artificial and robotic intelligence for finance, there is a direct connection and a direct impact on the service provided in the financial-banking field. Moreover, many of these services will be provided directly by robots as a result of the resource optimization process, as can be seen in the figure above.

The trend of digitization is not just in the field of finance, it is found in the vast majority of the economic branches. In our work to reflect the impact of artificial intelligence on the real economy, we will also find our analysis on the main indicators of stability of the real economy.

The holistic approach of the phenomenon of expansion of financial innovations, respectively of current financial technologies, as otherwise abbreviated to FinTech, knows very specific elements and adapted to the global financial context, and lately the share of financial services in the virtual space is dominant compared to their traditional form. Moreover, this new financing instrument has arisen mainly due to the need to streamline the financing system, based on technology, either to provide financial services adapted to the current needs of consumers (especially those who are in need of financing, this is also the real reason for the fintech coupling of the financial inclusion of the financially excluded), as well as the design of new financial products that are reliable and responsive to the market. The impact of these financial technologies will be directly on the real economy, more precisely its digitalization.

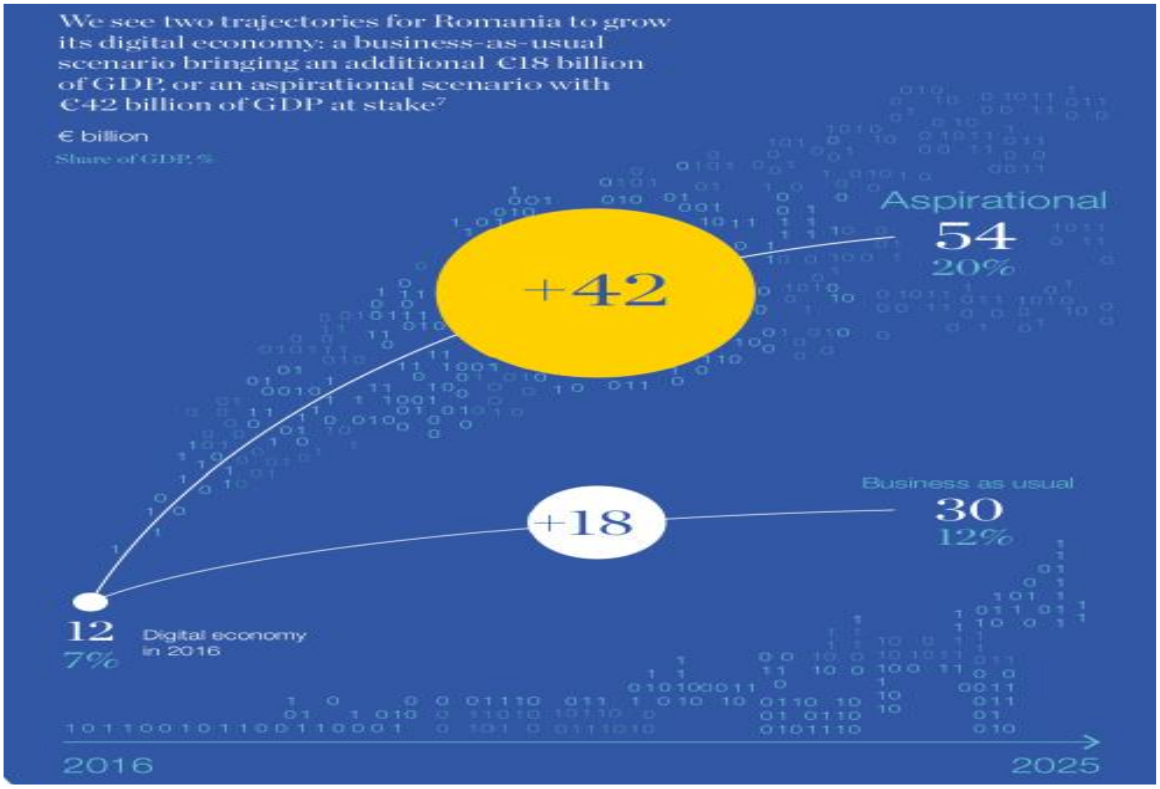


Figure 6. Scenarios regarding the digitization of the economy in Romania

Source: McKinsey, The rise of Digital Challengers, Perspective on Romania, 2018

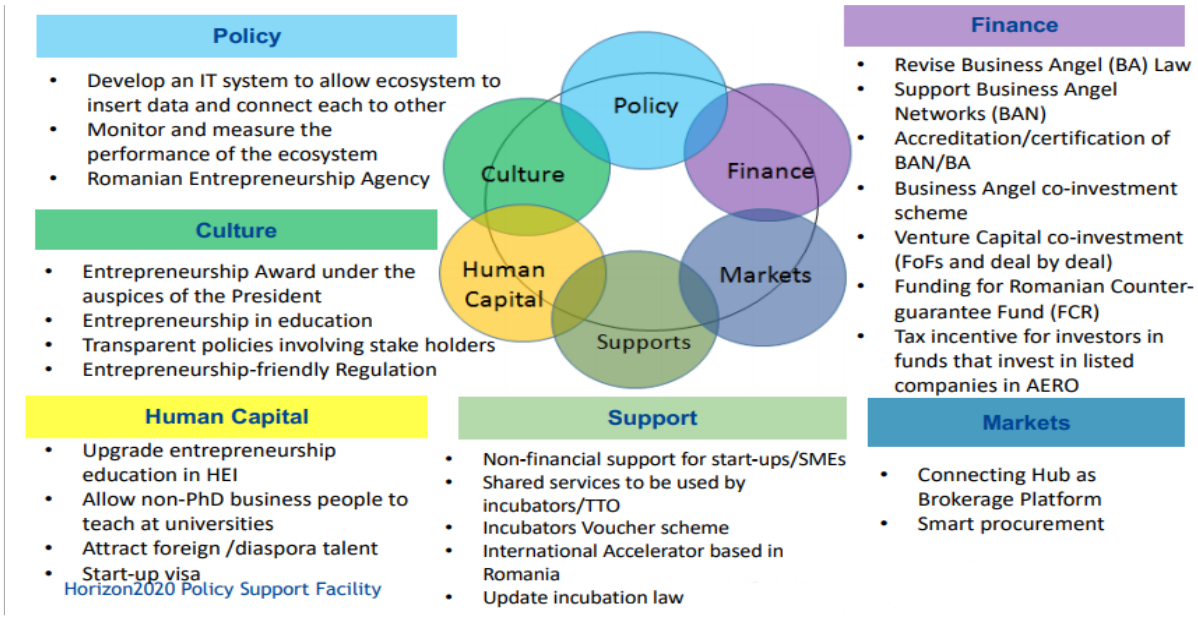

Policy
Develop an IT system to allow ecosystem to insert data and connect each to other
Monitor and measure the performance of the ecosystem
Romanian Entrepreneurship Agency
Culture
Entrepreneurship Award under the auspices of the President
Entrepreneurship in education
Transparent policies involving stake holders
Entrepreneurship-friendly Regulation
Human Capital
Upgrade entrepreneurship education in HEI
Allow non-PhD business people to teach at universities
Attract foreign /diaspora talent
Start-up visa
Horizon2020 Policy Support Facility
Policy
Culture
Finance
Human Capital
Markets
Supports
Finance
Revise Business Angel (BA) Law
Support Business Angel Networks (BAN)
Accreditation/certification of BAN/BA
Business Angel co-investment scheme
Venture Capital co-investment (FoFs and deal by deal)
Funding for Romanian Counter-guarantee Fund (FCR)
Tax incentive for investors in funds that invest in listed companies in AERO
Support
Non-financial support for start-ups/SMEs
Shared services to be used by incubators/TTO
Incubators Voucher scheme
International Accelerator based in Romania
Update incubation law
Markets
Connecting Hub as Brokerage Platform
Smart procurement

Figure 7.Transforming accelerators in Romania: EC Recommendations

Source: H2020 PSF Report, 2017

In order to be able to estimate at national level our capacity for innovation, technological transfer and entrepreneurship, especially in the financial field, we consider that besides the elements related to intelligent specialization, industrial transformation, a knowledge of the real economy at the level of each state could lead to the realization a financial architecture based on both the combination of the traditional form of financing and the current financial technologies.

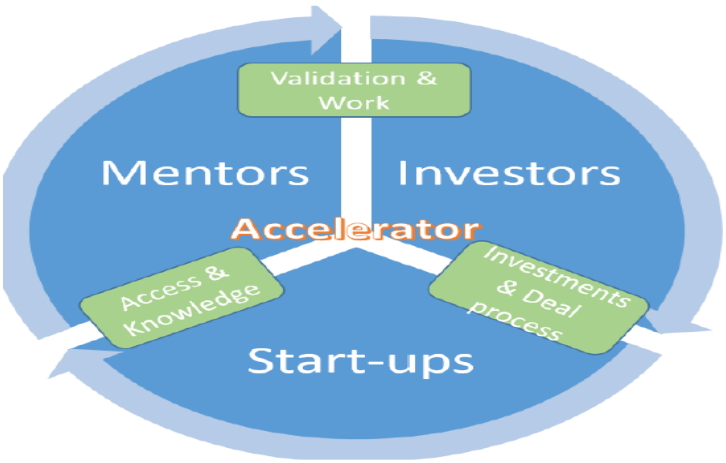


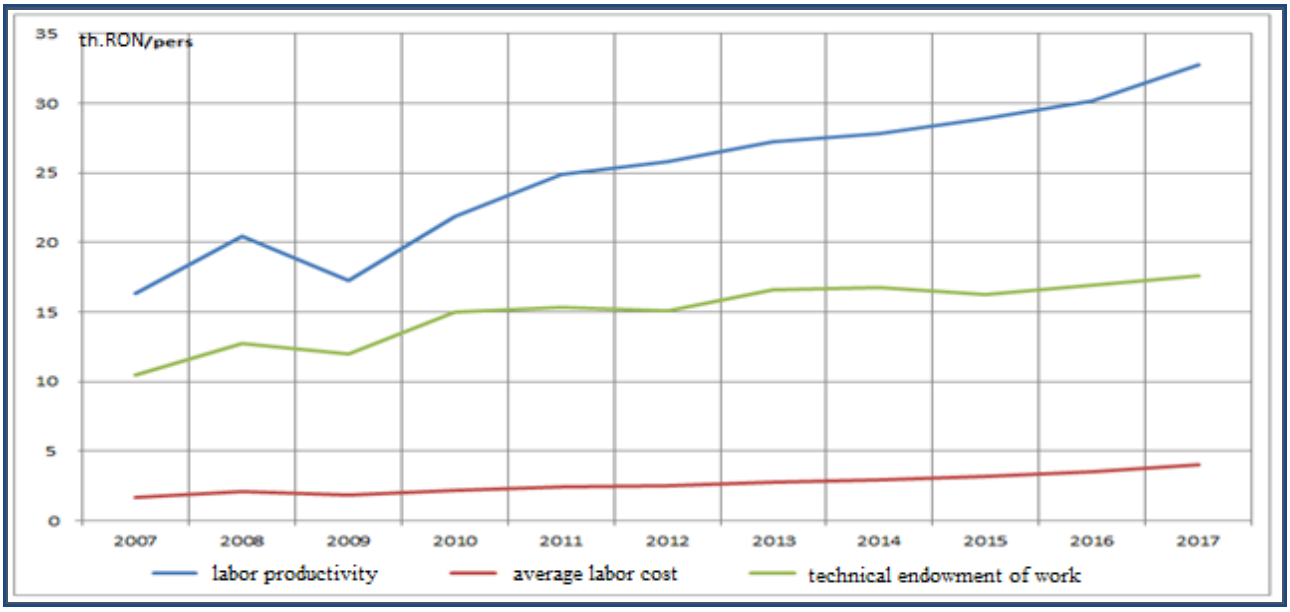
Figure 8. The business accelerator model in the context of AI

Source: H2020 PSF Report, 2017

In order to be able to rethink the architecture of financial services, in the context of the real economy (direct beneficiary of the finances), as well as the impact of artificial intelligence on these economic sectors, we consider that we should reflect some relevant information about the real economy, more precisely the reference indicators regarding the financial state of the real economy. In this sense we can exemplify at the level of Romania through the data published in the work of the Financial Statement of Romania, the 2018 edition, realized by the Centre for Financial and Monetary Research "Victor Slăvescu" within the Romanian Academy.

To capture the evolution of the real economy, as reflected in the above work, the following groups of performance indicators are calculated, namely: labour productivity, unit labour cost and technical endowment of labour; gross profitability of income, profitability of resources consumed, net operating margin rate; general solvency, immediate solvency, global solvency; self-financing rate, general debt ratio, debt ratio; own working capital rate, immediate liquidity rate, financial stability and debt repayment period.

The first category of indicators is given by labour productivity, unit cost of labour and technical endowment of labour. The dynamics of some performance indicators related to the degree of labour use in the total real economy are presented in the graph below.



Graph 1. Evolution of labour productivity, average labour cost and the technical endowment of work in the period 2007-2017

Source: Financial Statement of Romania, 2018 edition, Centre for Financial and Monetary Research "Victor Slăvescu", Romanian Academy

The methodology of calculating *labour productivity (in financial expression)* is given by the following calculation formula, respectively:

$$W_f = \frac{Ca}{Ns}$$

where, *Ca = Turnover* and *Ns = Number of employees*.

It is noted that during the period analysed, there were obvious increases in the value of the chosen indicators. Beyond the fact that all these indicators are based on a value expression of labour (labour cost), we observe the close and positive correlation between labour productivity, technical endowment of labour (including AI) and average unit labour cost. The impact of AI is also on the indicator the average labour cost, an indicator that is calculated according to the following calculation formula, respectively:

$$C_m = \frac{Csa}{Ns}$$

where, *Csa = personnel costs* and *Ns = Number of employees*

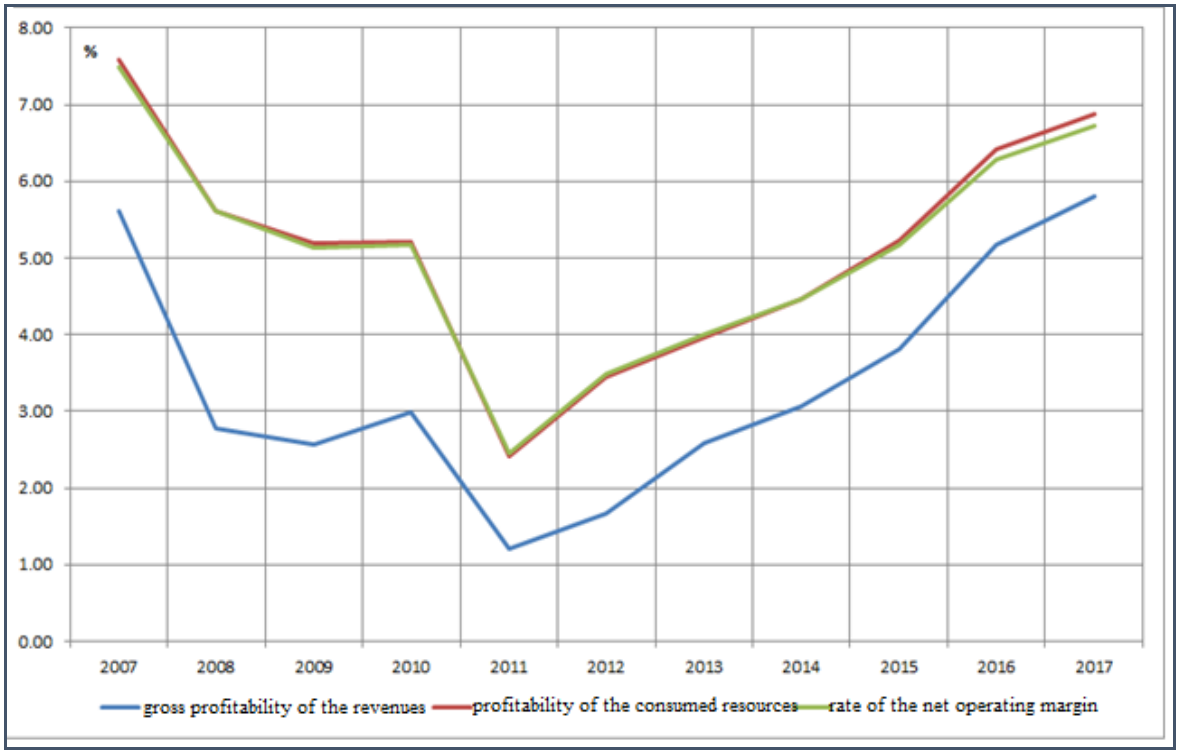
Labour endowment indicator (in financial expression) is calculated according to the following formula, respectively:

$$\hat{I}_m = \frac{Mf}{Ns}$$

where, *Mf = Total fixed assets* and *Ns = Number of employees*.

The second category of relevant indicators is given by *the gross profitability of the revenues, the profitability of the consumed resources, and the rate of the net operating margin.*

The dynamics of some performance indicators related to the total results, in the real economy are presented in the graph below.



Graph 2. Evolution of the gross profitability of the revenues, the profitability of the consumed resources and the rate of the net operating margin during 2007-2017

Source: Financial Statement of Romania, 2018 edition, Centre for Financial and Monetary Research "Victor Slăvescu", Romanian Academy

It is observed that there is a close correlation between the dynamics of these three indicators of economic-financial performance. The negative effects of the economic-financial crisis began to manifest since 2008, but most obviously in 2011, when the rate of return on resources consumed and the rate of net operating margin reached a "historical" minimum. It is also noted that not even in 2017, after 11 years, the level of 2007 was not reached (only in the case of the gross profitability of the revenues, and only in 2017).
The rate of return of income was calculated using the following formula, respectively:

$$R_v = \frac{Pbt}{Vt} * 100$$

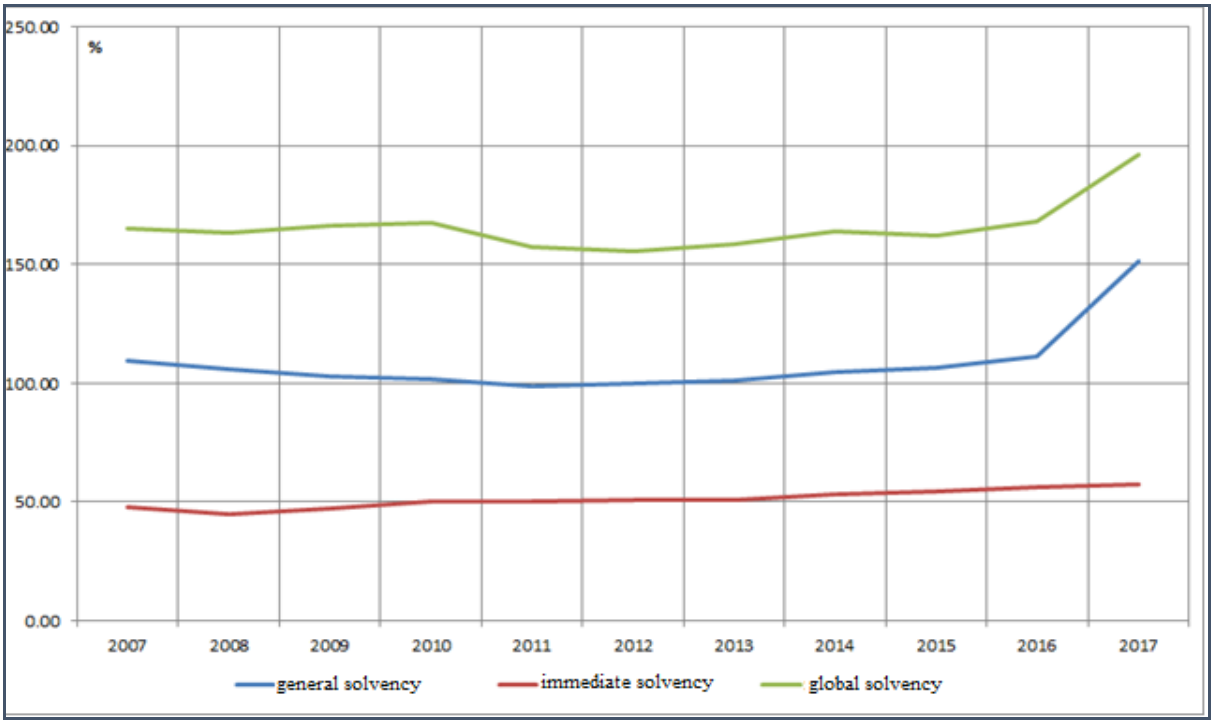
where, *Pbt = gross profit* and *Vt = total income*.
The *rate of return of consumed resources* indicator was calculated according to the following formula:

$$R_c = \frac{Pbe}{Ce} * 100$$

where, *Pbe = gross operating profit* and *Ce = operating expenses*
The *net operating margin rate indicator* is calculated according to the formula below, respectively:

$$R_{mn} = \frac{Pbe}{Ca} * 100$$

where, *Pbe = Gross operating profit* and *Ca = turnover.*
The category of indicators *general solvency, immediate solvency, global solvency* is another reference category in the context of digitizing the real economy.
The evolution of some solvency indicators, in the real economy, for the period 2007-2017 is presented in the graph below.



Graph 3. Evolution of general solvency, immediate solvency and global solvency over the period 2007-2017

Source: Financial Statement of Romania, 2018 edition, Centre for Financial and Monetary Research "Victor Slăvescu", Romanian Academy

From the point of view of the general solvency, as well as of the global solvency, there is a tendency to increase the level of these performance indicators over the last 6 years (with a significant increase in 2017), on a general trend of stability. In contrast, immediate solvency has a tendency to stabilize, around 50%.

The *general solvency indicator* is calculated according to the formula below, respectively:

$$S_g = \frac{Ac}{Dc} * 100$$

where, *Ac = Current assets* and *Dc = Current liabilities*.

The *immediate solvency indicator* is calculated according to the formula below, respectively:

$$S_i = \frac{Ac - St}{Dt} * 100$$

where, *Ac = Current assets*, *St = Stocks* and *Dt = Total liabilities*

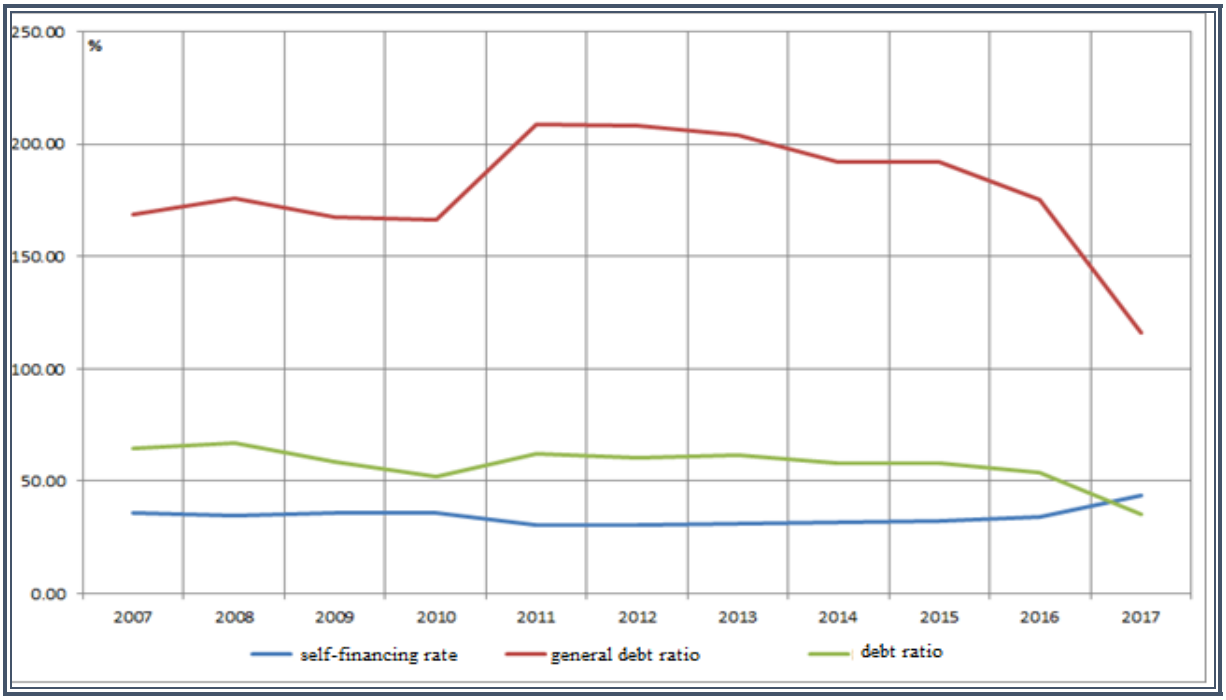
The *Global Solvency indicator* has been calculated based on the formula below:

$$S_{gl} = \frac{At}{Dt} * 100$$

where, *At = Total assets* and *Dt = Total debts*

The category of indicators the self-financing rate, the general debt ratio, the debt rate reflects the capacity of the companies in the real financing economy, moreover this indicator shows us not only the form of financing the real economy, but especially its opening to the current financial technologies or their degree of conservation. The high percentage of self-financing shows us a resistance of the Romanian companies to the traditional forms of financing. However, given the structure of the real economy, the phenomenon of digitization will be a fact, which is why we estimate in the near future a decrease in the percentage of self-financing of Romanian companies and an increase in the degree of financing through the existing financial technologies globally and which also entered the Romanian market.

The dynamics of some performance indicators directly related to the financing process in the real economy are presented in the following graph.



Graph 4. The evolution of the self-financing rate, the general debt ratio and the debt ratio in the period 2007-2017

Source: Financial Statement of Romania, 2018 edition, Centre for Financial and Monetary Research "Victor Slăvescu", Romanian Academy

It is observed that there is a positive and intense correlation between the dynamics of the self-financing rate and the debt rate and a tendency of stability of the level for the last years. During the period analysed, the general debt rate has a clear tendency to decrease, the phenomenon being more evident for the period 2012-2017, after the maximum level reached in the period 2011-2012. In 2017, the level of this indicator reached a level below that reached in 2007 (Manta O., Dimitriu M. (2018).

The *self-financing rate indicator* of the assets was calculated according to the following formula, respectively:

$$R_a = \frac{Cpr}{At} * 100$$

where, *Cpr = Equity* and *At = Total assets*.

The *general debt ratio indicator* has been calculated according to the following formula, respectively:

$$R_i = \frac{Dt}{Cpr} * 100$$

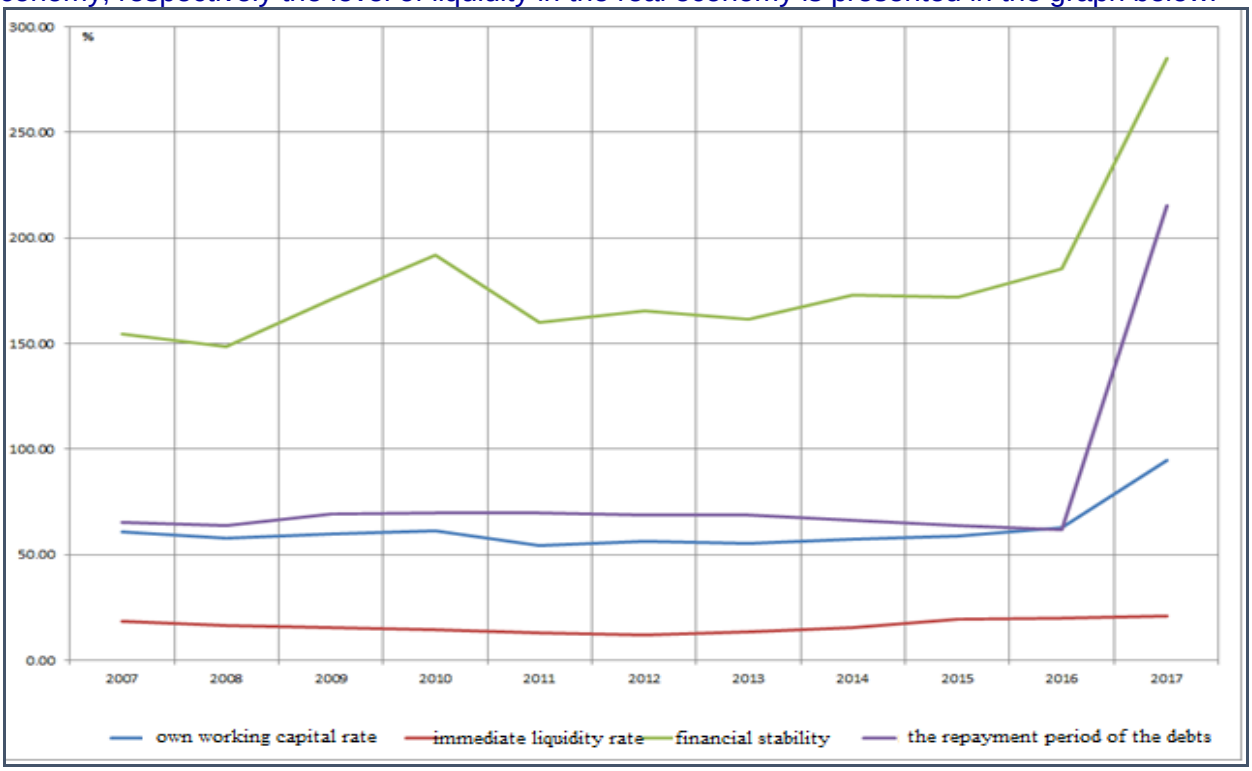
where, *Dt = Total debt* and *Cpr = Equity*.

The *Financial Debt Rate indicator* has been calculated according to the following formula, respectively:

$$R_{df} = \frac{Dml}{Cpr} * 100$$

where, *Dml = Medium and long term debt*, respectively *Cpr = Equity*

The category of indicators the ratio of the own working fund, the rate of immediate liquidity, the financial stability and the period of repayment of debts, confirms our performance in the real economy, respectively the level of liquidity in the real economy is presented in the graph below.



Graph 5. Evolution of the own working capital rate, of the immediate liquidity rate and financial stability in the period 2007- 2017

Source: Financial Statement of Romania, 2018 edition, Centre for Financial and Monetary Research "Victor Slăvescu", Romanian Academy

While own working capital and financial stability tend to recover over the last three years, after the minimum level in 2011-2012, the immediate liquidity rate continues to remain at a level close to that reached in 2007 regards the repayment period of the debts, a significant increase is observed in the last year of the analysed period. This fact can be justified by a migration of the behaviour of the companies to a certain type of transactions, to the detriment of the financial stability in the medium and long term (Manta O., Dimitriu M. (2018).
Indicator *The rate of own working capital (equity financing)* is based on the following calculation formula, respectively:

$$R_f = \frac{Cpr}{Mf} * 100$$

where, *Cpr = Equity* and *Mf = Fixed assets*

The *immediate liquidity rate* is calculated according to the formula below, respectively:

$$R_{li} = \frac{Disp}{Dc} * 100$$

where, *Disp = availability* and *Dc = current debts*

The *Financial Stability indicator* is most relevant to the state of the real economy at a given time, and is calculated according to the formula below, respectively:

$$S_f = \frac{Cpr}{Dml} * 100$$

where, *Cpr = Equity* and *Dml = Medium and long-term debt*

Conclusions

The experience of the current challenges regarding artificial intelligence offers sufficient useful elements, so that the deficiencies found can be reduced/eliminated. Financial stability at global and local level is an increasingly important phenomenon with a direct impact on financial inclusion.
Due to technological innovation, artificial in-law in the financial field could bring financial services (loans, guarantees, insurance, etc.) as close to people, especially to small entrepreneurs, and as close to their needs, actively contributing to financial inclusion in global level of the many non-banks.
At the international level, the Financial Stability Board (FSB) of the G20 began in April 2016, examining the potential risks that FinTech could present for global financial stability. FSB is currently conducting a mapping exercise that focuses on the impact of digitization and FinTech in the financial sector and the possible implications for the banking sector, which is closely monitored. At the same time, there are attempts at EU level to collect the links between FinTech, information and data and to explore how FinTech companies can tackle the cross-border issue, namely taking over financial services and financial inclusion. In its first status report on (CMU), the Commission foresees, in its CMU action plan, a comprehensive assessment of European markets for retail investment products, including distribution channels and investment advice, by the end of 2019.
The evaluation will be based on the contribution of the experts and to consider "whether retail investors can have adequate access to products on cost-effective and fair terms and if the potential offered by us the possibilities arising from online services and other technologies that they must to make financial services more efficient (FinTech) are being exploited The representatives of the European Commission have expressed the objective of understanding the FinTech sector and its players better, as well as assessing its impact on the banking sector and the non-banking financial institutions sector, respectively the services sector and its current players.
The effects of the absorption of digital financial technologies in the consolidation of the Romanian economy would be amplified by creating the conditions for the access of the domestic companies to the Fintech financial solutions, in order to stabilize the workforce and to consolidate the technological base at local level and with global impact.
Moreover, by developing digital financial instruments, as well as by digitizing the real economy, we could assist in better managing the European programs involved in financing the strategic sectors at European and national level.

The role of financial instruments is increased: Romania is among the last states in the use of financial-banking instruments and extensive efforts are needed to multiply the effect of using European funds to finance the economy.
The way in which artificial intelligence in the financial field has penetrated the development of financing tools and mechanisms directly adapted to the consumer, respectively the way in which these services reach the consumer (in most cases through digital platforms), each of them in a different way different, but, abstracting, managing to bring to the surface the evidence of stagnation, of sufficiency, and proposing a logical alternative but through unique, emotional approaches most of the time, they managed to impose themselves on local or global markets and implicitly pushed society to progress in leaps considerably higher than in conservative financial forecasts. In addition to the innovative financial services, the central banks have an essential role, namely the prudence and the management of the financial risks at national, European and international level.
The latest platform launched in Romania for digital financial services is the FinTech Innovation Hub of the National Bank of Romania (www.bnro.ro/FinTech-Innovation-Hub-20272.aspx), which according to the press release dated 23.09.2019 ”will be focusing on encouraging and supporting innovations in the field of payments and payment instruments, in a controlled manner and to the benefit of consumers and businesses, while at the same time identifying the potential risks involved and proposing measures to manage them ”.
Artificial intelligence in the financial field plays a decisive role in initiating and developing innovations in the field of financial and payment services, as well as overseeing financial transactions globally, making consumers' access to financial services more flexible, but especially in identifying potential risks in time, as well as limiting them through management measures.

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THE AFRICAN CONTINENTAL FREE TRADE AREA: WHY IS AFRICA TURNING TO MULTILATERALISM?

Ph.D. Eduard Marinov[70]

Abstract:

The Agreement establishing the African Continental Free Trade Area entered into force on 30 May 2019 and on 9 July all countries on the continent joined it. It marks a significant milestone in the process of African integration which started as soon as the countries on the continent gained their independence. If the massive deal works as hoped, it will connect 1.3 Billion people, create a 3.4 Trillion USD economic bloc, and heat up commerce within the continent itself. The paper aims at tracing the process of economic integration in Africa, discussing the rationale behind Africa's current efforts to achieve multilateral trade liberalization, analyzing the main features and assessing the potential benefits of the implementation of the African Continental Free Trade Agreement.

Keywords: *economic integration theory, developing countries integration, FTA, African economy*

JEL classification: *F15, F55, N77*

Introduction

The leaders of all African nations met on 7 July to make a critical expansion to their continental free trade zone. If the massive deal works, it will connect 1.3 Billion people, create a 3.4 Trillion USD economic bloc, and heat up commerce within the continent itself. This agreement underlines how Africa is moving in a different direction than other regions in the world. The continent's leaders are embracing integration, while some global counterparts have turned away from multilateralism (Shao, 2019).

The Agreement establishing the African Continental Free Trade Area (AfCFTA) entered into force on 30 May 2019. The decision on its creation was adopted at the 18th Ordinary Session of the Assembly of Heads of State and Government of the African Union, held in Addis Ababa, Ethiopia in January 2012. In terms of numbers of participating countries, the AfCFTA will be the world's largest free trade area since the formation of the World Trade Organization. Estimates from the Economic Commission for Africa (UNECA) suggest that the AfCFTA has the potential both to boost intra-African trade by 52.3 percent by eliminating import duties, and to double this trade if non-tariff barriers are also reduced (UNECA, 2019, p. 3). As at 7 July 2019, only Eritrea has yet to sign the consolidated text of the AfCFTA Agreement.

The Agreement marks a significant milestone in the process of African integration which started as soon as the countries on the continent gained their independence. The main objectives of the AfCFTA are to create a single continental market for goods and services, with free movement of business persons and investments, and thus pave the way for accelerating the establishment of the Customs Union. It will also expand intra-African trade through better harmonization and coordination of trade liberalization and facilitation and instruments across the RECs and across Africa in general. The AfCFTA is also expected to enhance competitiveness at the industry and enterprise level through exploitation of opportunities for scale production, continental market access and better reallocation of resources.

The paper aims at analyzing the AfCFTA from a historical, theoretical and economic point of view. Therefore the first section traces the process of economic integration in Africa, the second discusses the rationale behind Africa's current efforts to achieve multilateral trade liberalization,

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while the last two analyze the main features and assess the potential benefits of the implementation of the African Continental Free Trade Area.

A brief summary of African economic integration

Regional integration in Africa is a stated priority goal of both African governments and international donors since the early days of independence. It should address the dynamics of the globalized economy as a means of ensuring competitiveness through the best options available in the field of international trade. In the case of Africa, it is even more important because of the colonial heritage, poor management and numerous conflicts (UNECA, 2010, p. 23). Regionalism is seen as a possible remedy for the political and economic problems of the continent.

Since the late 50s, regional economic integration, even in its lower forms, began to make its way in the Third World. The aim was to achieve political unification, institutionalized in a Union of African States and a Union Government. Besides the political objectives, during this period emerged the idea of economic independence – "the countries to be able to develop their economy based on domestic characteristics and needs and to participate in international economic relations in accordance with the principles of equality and mutual benefit" (Malhasian, 1979, p. 56).

On May 25th 1963 the Organization of African Unity (OAU) was founded in Addis Ababa by 32 participating states. It managed to incorporate the countries aiming at instant unification on and those that believed in a gradual process towards unification. In the period between the first years after its creation until the signing of the Abuja Treaty, the OAU became even less noticeable and insignificant. Its main role was to be a mediator in resolving disputes and domestic and international conflicts. Economic issues remained in the background, hence, Mathews describes the Organization as one being about politics, rather than economics (Mathews, 2008, p. 32). However, during the meetings of state and government leaders the idea of an economic union was conceived and developed, which ultimately led to the signing of the Treaty establishing the African Economic Community (TAEC). Due to the ineffectiveness of the OAU in 1999 a special meeting was held in Sirte, which adopted a declaration for the creation of the African Union (AU) to replace the OAU. The acceleration of the implementation of the TAEC was also among the objectives of the declaration. On July 9th 2002 in Durban the OAU was officially transformed into the African Union (AU).

The Abuja Treaty, which established the African Economic Community (AEC), was signed on June 3rd 1991 and entered into force in 1994. It set the plan for the creation of an African economic and monetary union (with a common currency) to 2028 through the subsequent implementation of six stages. The main motive for the creation of the AEC was the need to reduce the economic dependence of African countries from third countries and to stimulate economic development and economic growth. The AEC was established as a part of the African union. The Treaty defines six stages that should be completed for the gradual creation of the AEC for a period of 34 years (Figure 1).

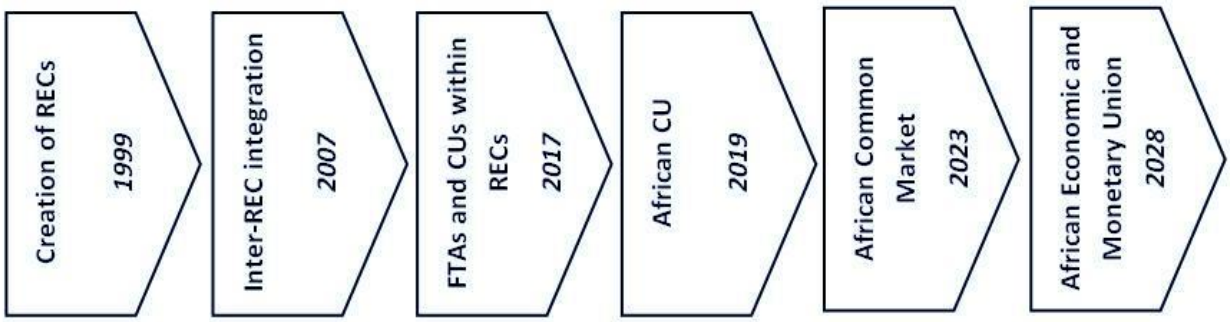

Figure 1. Stages of creation of the AEC

Source: created by the author.

The Treaty adopts an integration approach that to a great extent depends on the success of integration processes within the regional economic communities (Mlenga 2012; p.2). The Treaty explicitly states that the AEC will be established mainly based on coordination and gradual integration of the activities of existing RECs. Thus RECs are defined as the building blocks of the AEC. The idea of this stage approach is that integration should firstly be ensured at a regional level

through the creation and strengthening of the regional economic communities which in a certain moment will merge into the AEC.

Increased regional trade cooperation through the removal of intraregional trade restrictions (i.e. tariff and nontariff barriers) is a critical strategy to address the challenges posed by small domestic markets, limited economies of scale and the marginalization of African economies in world trade. The result was the creation of many trade blocs in Africa, aimed at reducing and removing trade barriers, with each country belonging to more than one preferential trade agreement (Kalenga, 2013, p.1). This has led to the problem of overlapping membership in multiple and often conflicting trade regimes that is often regarded as undermining the effective implementation of the respective for each integration scheme trade commitments. The multiplicity of trading arrangements in southern and eastern Africa, ranging from bilateral agreements between individual countries to PTA, FTA and customs unions poses a huge implementation challenge to the business sector, customs administrations and other private and government agencies involved in managing or facilitating trade.

There has been significant progress in the implementation of the stages of the creation of African economic community. Most regional economic communities fulfil their obligations under the AEC Treaty on schedule, in some there is a delay, and some are even ahead of the deadlines. Although the regional communities are making a lot of effort for the realization of the first three stages set in the Treaty by adopting a phased abolition of customs duties in intraregional trade, there are many differences among them – some regional economic communities still cannot create a free trade area, while others already have a working customs union. The pace of progress is not the same and overlapping membership of many countries in two or more regional communities makes it obligatory for strategic decisions to be taken. The recent creation of the African Continental Free Trade Area could be seen as a first step towards a continental customs union, a common market and the ultimate goal – a fully functioning African economic community.

The rationale behind Africa's strive for multilateral integration

This section will discuss the theoretical background for the different motivation of developing and least developed countries to participate in multilateral international economic integration agreements to answer the question why does now Africa push so much efforts towards a continental trade agreement and multilateral liberalization when most of the players in global economy have turned towards bilateral trade agreements and even are imposing measures which speak of pure protectionism.

In most cases, theories of economic integration and its benefits – of dynamic ones, but even more of static ones, are not fully applicable to integration agreements among developing and least developed countries. Even Balassa (Balassa, 1965, p.16) claims that theoretical literature on economic integration issues discusses customs unions only in industrialized countries. Their problems and environment are not related to economic development, but more to relative changes of production and consumption features.

Traditional theory assumes that the larger (in economic terms) the participating countries are, the more substantial the benefits of integration will be. According to Abdel Jaber (Abdel Jaber, 1971, p.262) if the size of the economy is measured by the gross national product, integration benefits for developing countries are negligibly small. Balassa on the other hand claims that integration gains depend not only on the size of the countries participating in the integration arrangement, but also on their rate of economic growth. Thus, as developing economies tend to grow at higher rates than already developed ones, the benefits of integration for them would be even bigger (Balassa, 1961, p.38). Another possible measurement of the size of the integration community is the number of population. Under this criterion, developing countries will surely benefit from integration as they are usually over populated (Hosny, 2013, p.144).

Developing countries in general are specialized in the production of primary products. According to Abdel Jaber (Abdel Jaber, 1971, p.256-257) there is nothing wrong with that as long as the economic surplus gained from this type of production could be reallocated and invested efficiently in other sectors. That however is rarely what happens in reality, thus most developing countries adopt a trade policy of diversification and import substitution to accelerate economic growth. Balanced growth can be achieved by small developing countries by increasing the size of the market, benefiting from economies of scale, and expanding their inter-industry transactions, i.e.

through economic integration. For these effects to be achieved however, a strong commitment is required – both in economic and political terms.

In the past, developing countries have sought motivation for economic integration in the benefits from trade diversion and import-substituting industrialization. Later on, with the introduction of the ideas of the dynamic effects of integration, they began to find arguments for integration in the economies of scale, investment creation, technology transfer, etc. Nowadays, however, the integration initiatives of developing countries far exceed those arguments – most of them pursue policies of trade liberalization and deregulation as part of their overall stabilization programs agreed with international organizations. This approach has the goal to make economic integration policies compatible and complementary to other policies in order to promote international competitiveness. Therefore, according to Hosni, most developing countries regard economic integration as a tool for more competitiveness in a global economy (Hosny, 2013, p. 143).

Lipsey assumes that the lower the share of international trade in GDP of the member states of an integration agreement is, the greater the expected benefits of a customs union on welfare will be (Lipsey, 1960, pp. 508-509). This is very important for developing countries because trade as a percentage of GDP in low-income countries has always been lower than in countries with a high level of income, although in recent years this imbalance is decreasing (Hosny, 2013, pp. 144-145). However, the same does not apply to countries with medium levels of income and least developed countries – their share of trade in GDP is even more significant than that in high-income countries. It can therefore be concluded that this criterion is not applicable to developing countries, because subgroups among them may have a larger or smaller share of trade of GDP compared with high-income countries.

According to Lipsey an integration agreement will bring more benefits in terms of welfare if the share of intraregional trade is growing, while trade with the rest of the world is decreasing (Lipsey, 1960, pp.508-509). Studies show that, trade between developing countries is always much weaker than that between developed countries, suggesting that the benefits of integration regarding welfare will also be smaller.

However, other researchers (Balassa, 1965; Abdel Jaber, 1971) believe that this assumption should not always be taken for granted. They list several factors that restrict trade among developing countries, arguing that if these barriers are removed, trade flows between developing countries engaged in an integration process will likely increase. These factors include: first, the low level of economic development; second, inadequate transport infrastructure and facilities; third, foreign currency control and other restrictions on imports; fourth, inadequate marketing; fifth, the lack of standardization.

It is widely recognized that the best indicator of the success of an integration agreement is the increase of the share of intra- and interregional trade in the total trade flows of member states. Although this is an important aspect of integration Inotai (Inotai, 1991, p.10) believes that it should not be seen as a means to its end. Equally important are the industrial development, the adequate infrastructure, the increase of the technological level, etc. Furthermore, the growth of regional trade may be the result of trade diversion from more efficient and competitive third countries. Therefore it can be regarded as positive only if it is combined with improving global competitiveness as a whole.

A major part of the imports from developed to developing countries consists of capital goods. From the dynamic analysis point of view, integration among developing countries requires substantial investments and since most of them are imported from developed countries in the form of capital goods it is likely that the volume of imports of integrating developing countries will grow. The conclusion of Mikesell is that the long-term goal of integration between developing countries should not be to reduce trade with the outside world, but rather to change in their trade structure (Mikesell, 1965, p.209).

Sakamoto (Sakamoto, 1969, p.293) believes that if the result of integration among developing countries is the trade diversion of consumer goods, this will release more foreign currency for imports of capital goods from third (developed) countries. The volume of trade with the rest of the world may not change or may even increase, but the important thing is it changes its structure.

Another thing that should be noted is that while in developed countries the main rationale for economic integration comes from economic groups of stakeholders, in developing countries integration processes often initially start as a political goal and effort, which in most cases leads to

unsatisfactory economic results. Integration processes could be interpreted from the point of view of a combination of economic and political determinants (Haas and Schmitter, 1964, p.713-720).

From the above said, it is obvious that the rationale behind economic integration among developing countries could not be defined and explained just by the static and dynamic effects that determine integration between developed economies. With developing countries some factors have a stronger, while, controversially, others have a weaker impact on their willingness to participate in integration agreements. To assess the integration benefits and costs for developing countries one must take into account their specifics such as stage of economic development, structure of the economy, production characteristics, demand preferences, trade regimes and policies, etc., as well as to have in mind the complexity of the political determinants of economic integration among developing countries.

Although "the benefits of liberalization are important and obvious, but they have already been realized for most of the developed economies" (Ackerman, 2016), the lesser level of economic development, the low volume of intra-African trade and the fast rate of economic growth, as well as the desire to have more market and bargaining power in global economy, makes the creation of a multilateral trade agreement such as the African Continental Free Trade Area beneficial for African countries. "On a pan-African scale, the economic impact of AfCFTA will be significant ... removing tariffs on intra-African trade will boost net income at the continental level by 2.8 Billion USD per annum" (Shao, 2019).

The African Continental Free Trade Area: scope, main features and implementation

The AfCFTA, once complete, will be a continent-wide free trade area for those states which have deposited instruments of ratification. The AfCFTA, along with the free movement of persons and the single air transport market, is a flagship component of the broader Agenda 2063 program – the African Union's framework for structural transformation and development. The African Union's initiatives to Boost Intra-Africa Trade, the Programmes for Infrastructure Development for Africa, and Accelerated Industrial Development for Africa are essential to realize the benefits of the AfCFTA (Tralac, 2018, p. 8). It is called a 'Free Trade Area' but will be more akin to a comprehensive partnership agreement because the disciplines will go beyond trade in goods to over services, investment, competition and intellectual property.

The main objectives of the AfCFTA are to create a single continental market for goods and services, with free movement of business persons and investments, and thus pave the way for accelerating the establishment of a continental customs union. It will also expand intra-African trade through better harmonization and coordination of trade liberalization and facilitation and instruments across the RECs and across Africa in general. The AfCFTA is also expected to enhance competitiveness at the industry and enterprise level through exploitation of opportunities for scale production, continental market access and better allocation of resources.

The overarching aims of the agreement with respect to goods are progressive elimination of tariffs; progressive elimination of non-tariff barriers; enhancing the efficiency of customs, trade facilitation and transit; cooperation on technical barriers to trade and sanitary and phytosanitary; development and promotion of regional and continental value chains; socio-economic development, diversification and industrialization across Africa.

The overarching aims of the agreement with respect to services are: enhance competitiveness of services; promote sustainable development; foster investment; accelerate efforts on industrial development to promote the development of regional value chains; progressively liberalize trade in services.

The AfCFTA Agreement is the umbrella instrument (Tralac, 2018, p. 2). Trade in goods and trade in services are negotiated in Phase I with negotiations on a number of issues (e.g. rules of origin, tariff concessions etc.) still ongoing, while Phase II will cover Intellectual Property Rights, Investment, and Competition policy (Figure 2).

The decision on the AfCFTA sets out an ambitious timeline for further negotiations; however, this may be amended by the Member States. According to the Decision on the AfCFTA, the completed Annexes to the Protocol on Trade in Goods, Annexes to the Protocol on the Rules and Procedures

on the Settlement of Disputes, and the List of Priority Sectors on Trade in Services should be submitted to the July 2018 session of the AU assembly for adoption. The 5 agreed priority services sectors are transport, communications, tourism, financial, and business services. Negotiations on rules of origin are still to be finalized. The Decision of the AU Assembly also provides that Schedules of Tariff Concessions and Schedules of Specific Commitments on Trade in Services should be submitted in January 2019. The second phase of negotiations was scheduled to commence in August 2018 to negotiate protocols on Investment, Competition and Intellectual Property. These negotiations have, however, not yet commenced. The AU Assembly decision requires these protocols to be submitted to the January 2020 session for adoption.

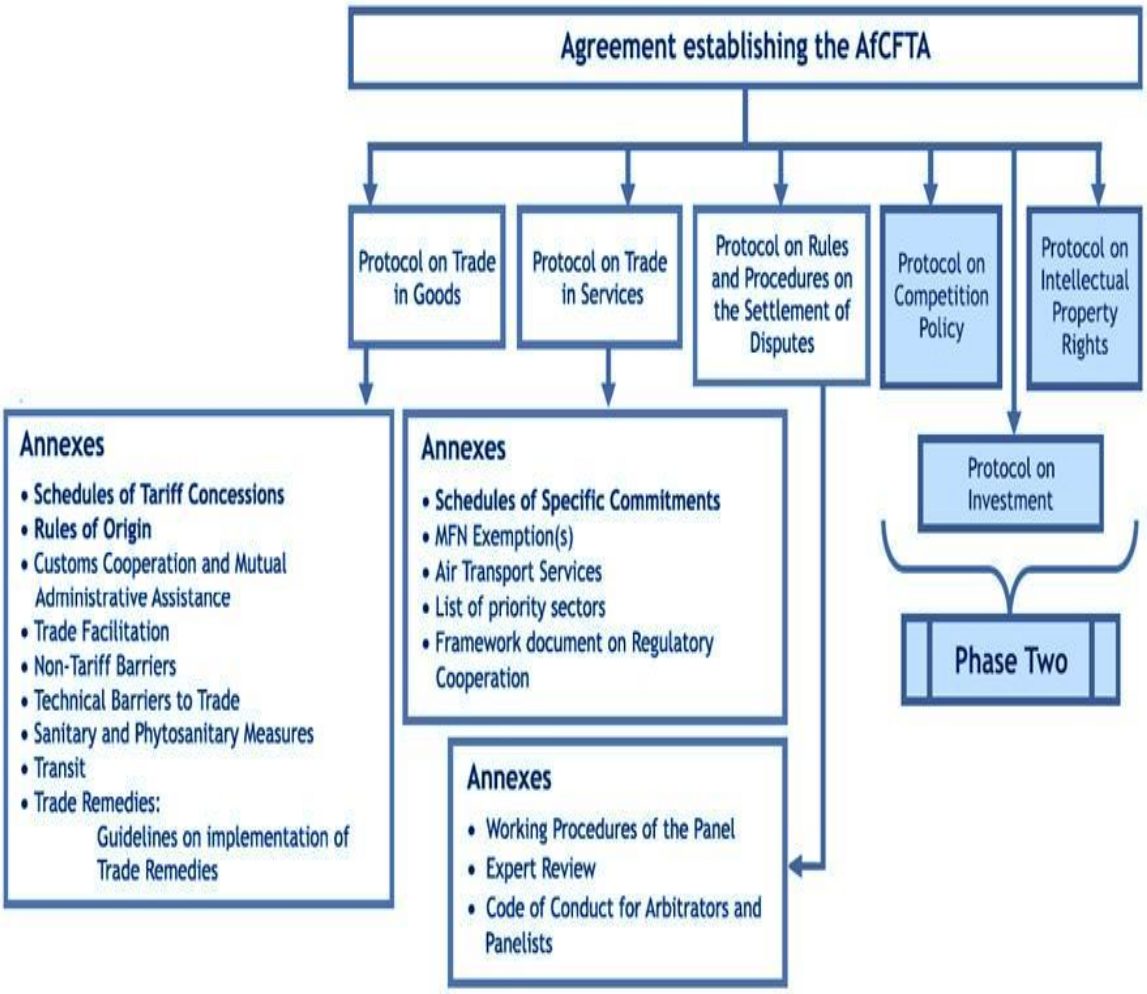
Agreement establishing the AfCFTA
Protocol on Trade in Goods
Protocol on Trade in Services
Protocol on Rules and Procedures on the Settlement of Disputes
Protocol on Competition Policy
Protocol on Intellectual Property Rights
Protocol on Investment
Phase Two
Annexes
• Schedules of Tariff Concessions
• Rules of Origin
• Customs Cooperation and Mutual Administrative Assistance
• Trade Facilitation
• Non-Tariff Barriers
• Technical Barriers to Trade
• Sanitary and Phytosanitary Measures
• Transit
• Trade Remedies:
Guidelines on implementation of Trade Remedies
Annexes
• Schedules of Specific Commitments
• MFN Exemption(s)
• Air Transport Services
• List of priority sectors
• Framework document on Regulatory Cooperation
Annexes
• Working Procedures of the Panel
• Expert Review
• Code of Conduct for Arbitrators and Panelists

Figure 2. Phases of implementation of AfCFTA

Source: Tralac, 2019, p.5.

The negotiations will aim to progressively reduce and eliminate customs duties and non-tariff barriers on goods. At this stage the goal is for 90% of tariff lines to have a zero duty within 5 years (or 10 years for LDCs). The modalities also provide for members to negotiate on sensitive products, on a request and offer basis, on which tariffs would reduce to zero over a longer period – 10 years for non-LDCs and 13 years for LDCs. The sensitive products and their schedules of tariff reductions may be different in each bilateral relationship.

Trade within RECs will continue according the trading regimes they have in place (customs unions or free trade areas). New tariff liberalization under AfCFTA will only occur among Member States that do not have an existing agreement with one another. For example, SACU Member States do not have any existing preferential trade arrangements with ECOWAS Member States, so tariff concessions need to be determined (Tralac, 2018, p. 6). The AfCFTA does provide for the eventual establishment of a continental customs union, but this is a long way off.

As the nominated leader of the AfCFTA Mahamadou Issoufou, President of the Republic of Niger said “the AfCFTA baby is healthy and growing. We need to ensure that the baby continues to grow. The decisions that we make are very critical in this regard. And when that is achieved, our voice and leverage will also grow. In this way, we would be better placed to negotiate mutually beneficial partnerships with the rest of the world. We should now strive to conclude the negotiations and move to the implementation phase to sustain the growth momentum of the AfCFTA baby…

We have now reached a critical point in the journey of realizing the vision of Creating One African Market. We are about to enter the operational phase of this journey. This will be challenging. However, with the record established so far, I believe we are ready to meet any challenge, no matter how complex it might be. As the popular saying goes: “where there is a will, there is a way”. Our will to continue this journey is strong and unshakable.” (AU, 2019b, pp. 7-8).

Africa facts and figures

Although Africa is the second largest continent on area and population, the economies of the countries there is the least developed in the world. The main reason for this are the properties of national economies of most of those countries which are resource based and oriented mainly towards the development of the primary sector. African countries have a growing role in world politics and economics, especially in terms of the great economic potential and the natural resources they have, as well as of their reorientation towards democratic values and a market economy.

In general Africa is the poorest region in the world – the negative influence of a number of factors inherited from colonialism, slavery, local corruption, socialist economic policies and inter-ethnic conflicts is still felt here. Most of the world's least developed countries (34) are concentrated in this part of Africa, while many countries also face difficulties in tackling hunger, disease, drought and poverty. However, in recent years (since 2011), Africa is one of the fastest growing regions in a global context. According to IMF estimates, six of the world's fastest-growing economies for 2001-2010 are located south of the Sahara (Angola – 11.1% average annual growth, Nigeria – 8.9%, Ethiopia – 8.4%, Chad – 7.9%, Mozambique – 7.9%, Rwanda – 7.6%), while in 2011-2015 the countries with an average annual growth rate of 7-8% are already seven (Ethiopia, Mozambique, Tanzania, Congo, Ghana, Zambia, Nigeria) (IMF, 2018).The main potential for the future development of the region is its population. In 2015, it was over 1 Billion people, with a growth rate of 2.3%, and according to the current projections, in 2050 it will be between 1.5 and 2 Billion people (UN, 2015).

The density of the population is 42 people per square kilometer (compared to 170 in the Western Europe, and 140 in Asia). The average age in most African countries is under 20 (compared to over 30 in Asia and Latin America, 36 in the United States, and over 40 in Europe and Japan).

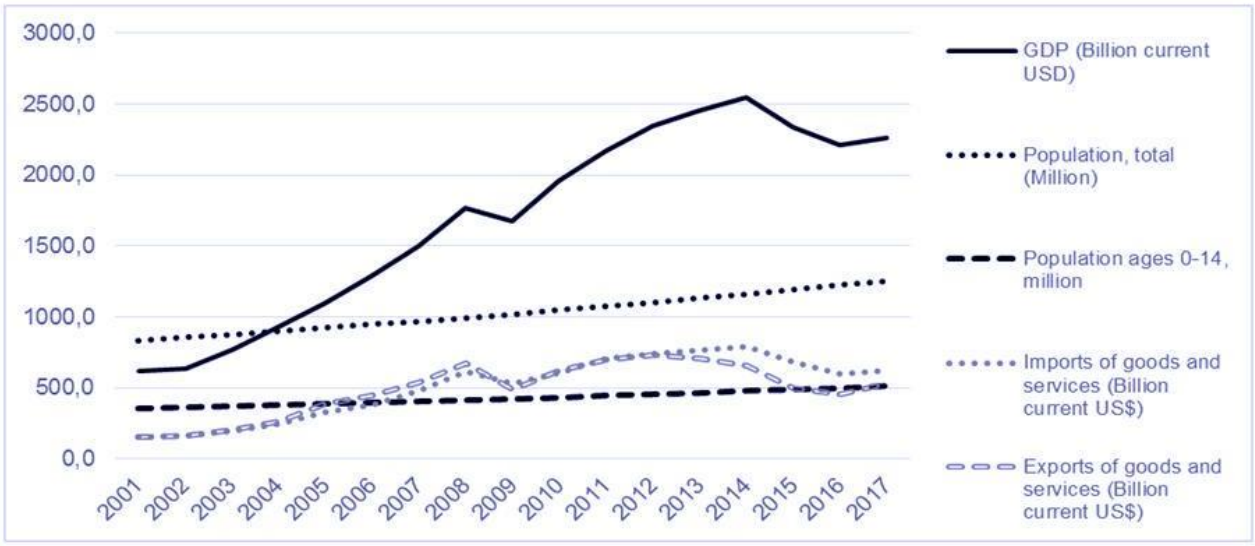

Figure 3. Main economic and demographic indicators for Africa

Source: World Development Indicators.

Africa's trade flows have been growing steadily since the beginning of the century, with a growth rate almost twice higher than the global increase, and with exports increasing faster than imports (Figure 4).

However, most of the goods traded by African countries have low value added and include mainly raw materials (mostly fuels and agricultural produce). The main export commodities of the continent are fuels and minerals - they account for over half of the exports, of which about 75% are fuels. From a global perspective Africa is the largest exporter of gold, uranium, chromium, vanadium, antimony, coltan, bauxite, iron ore, copper and manganese.

Africa is highly dependent on manufactures import which represents nearly 2/3 of the total export value and almost half of it is import of machinery and transport equipment. Manufactures and especially machinery and equipment remain with high shares in imports and although this is positive as these goods are investment assets, it reflects two main weaknesses in Africa's economies structure. The first is the continuous strong dependency on import of producer goods which shows that although necessary African countries still have not managed to undergo through a technological transformation. The second is the failure of the manufacturing sector to take its rightful place in consumer goods import which, as stated by Ali-Dinar, proportionally remains at the same levels as in the beginning of the 1970-ies (Ali-Dinar, 1995, p.30).

African countries' main trade flows are highly dependent on their historical ties with the rest of the world and especially with Europe. Over 80% of all African exports are directed towards markets outside the continent. Similar is the share of imports coming from external sources (Figure 4).

The majority of African counties' trade flows, consisting of over 80% of the total volume of trade since the beginning of the century are directed towards the EU (33% in 2018), PR China (16%), intra-continental trade (15%), the USA (8%), India (6%), Japan (3%) and Russia (1%).

The main trends observed are the shift of trade flows from the EU and the U.S. to China and India, although in almost all communities the EU maintains its leading position as trade partner. Moreover, a closer look at the data for the past 15 years shows that trade fluctuations in Africa are primarily due to movements in the same direction of trade namely with China and India. African countries trade less with each other, but they have the potential to increase trade in terms of geographical proximity, cultural heritage and size of the economies. Since 2000 interregional trade is growing at a faster pace than the total volume but its share and volume still remain low.

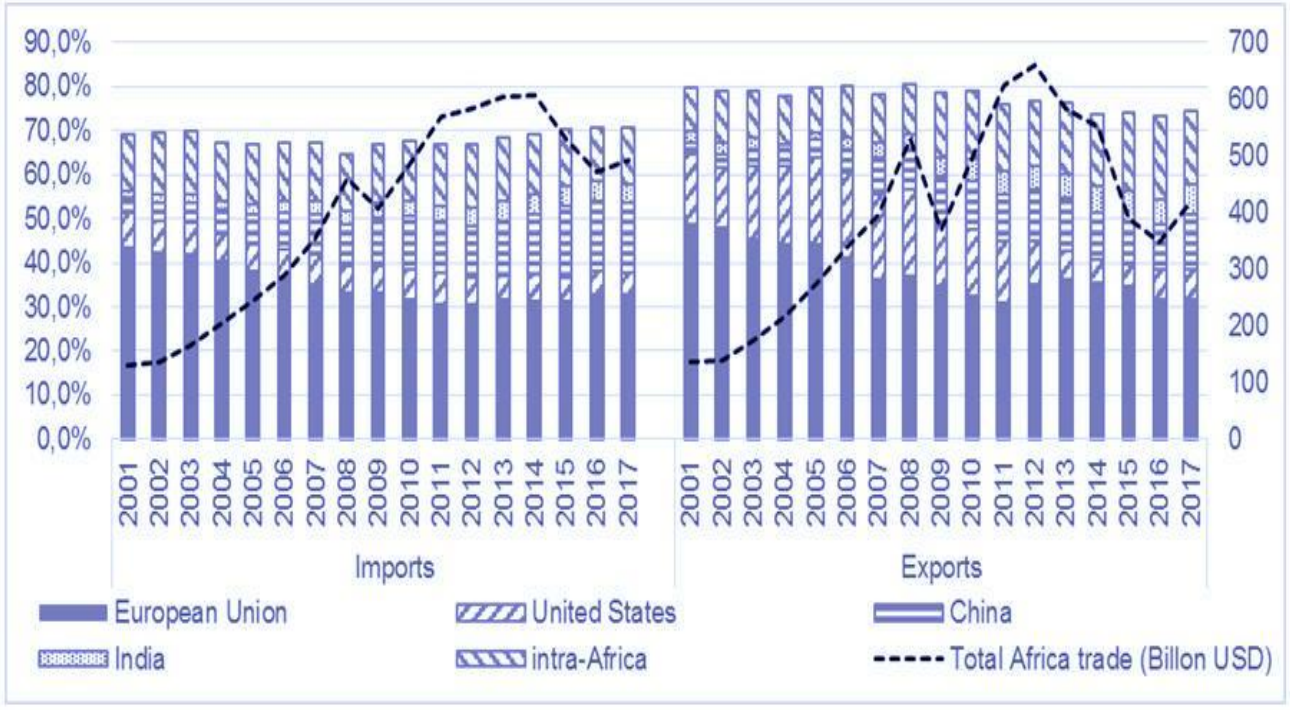

Figure 4. Africa international trade

Source: ITC.

It is not a coincidence that over the past few years many of the leaders of the world's largest economies have made visits to Africa – even to places that none of their predecessors have ever visited. Along with the huge wealth in resources and the increasingly open markets, Africa, though currently producing less than 3% of global GDP, concentrates in it over a quarter (26.2%) of the world's population under 15 – the future workers and consumers.

Conclusion

The development potential of Africa is undoubtedly enormous. Undoubtedly, there has been a serious rearrangement of key external players in recent years, and some of the countries in the region have been seriously involved in both regional and global international economic relations. The recent start of the African Continental Free Trade Area could make Africa a serious player in global economy.

If implemented, the African Continental Free Trade Area could unite 1.3 Billion people, create a 3.4 Trillion USD economic bloc and boost trade within the continent itself. It would also bring benefits for both African and international investors, as it will make it easier for businesses to expand operations across the region, thus fostering net income at the continental level, economic growth and welfare.

As the current chairman of the union, Egyptian President Abdel Fattah al-Sisi said at the July 2019 African Union Summit “The eyes of the world are turned towards Africa. The success of the AfCFTA will be the real test to achieve the economic growth that will turn our people’s dream of welfare and quality of life into a reality” (AU, 2019a).

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Economic Growth by Increasing the Competitive Advantage

PhD Cristiana MATEI[71]

***Abstract**:*

The paper highlights the fact that studies, analyses, and researches are necessary in order to ensure long term economic growth and development; thus new ways to promote economic activities are discovered, by promoting products, works and services which take into account the increasing concern for the environment, for the personnel of the companies involved and for society in general. As a consequence, companies that are aware of the need for social and environmental reporting should be encouraged. Companies can develop a valuable resource by social and environmental reporting, which in turn increases their reputability. Therefore, environmentally sensitive companies negatively influence society and the environment at the operational level and are considered dangerous by society. Now, these companies can strategically change this perception to their advantage by social and environmental reporting.

***Keywords**: competitive advantage, economic growth, reputability*

***JEL classification**: O25, O32, O35*

Without the striving for infinity there is no life, no development, and no progress.
Vissarion Belinski
(Russian philosopher and literary critic, founder of Realism
in Russian literature, born 1811 – died 1848)

Introduction

Economic operators must develop closer relationships with those who supply them with raw materials, consumables and equipment (the connection between suppliers and customers) in order to operate in the economic environment. In other words, manufacturers and suppliers must create and maintain harmonious relationships during the process of supplying both with those who provide the necessary supplies for the production processes and with those who receive their products, works and services obtained in the activity carried out respectively customers or consumers.

As we are well aware, performing an activity entails interacting with the constantly expanding global markets; increased competition is expected in these circumstances. Therefore in terms of goods, works and services requested by customers, economic operators must be aware and pay increasing attention to the area raw materials and consumables come from and also to the way in which products, works and services are designed and manufactured. Increased attention must also be given to the transport of these economic goods, to the way in which their own goods, works and services are obtained, but also to the distribution network to clients, including the study of what clients and consumers really want.

Of course, the supply architecture implies a successful flow of raw materials and consumables in order to keep costs under control so that products, works and services are obtained at competitive prices which also satisfy customers or consumers' needs.

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There are specialists (Lynch, 2006) according to which one must consider the fact that the supply of the chain management is one of the most complex aspects, and many inherent risks arise in this process.

It also shows that all the elements included in the strategy of an organization are very important because the future actions of the organization are influenced by the way in which decisions are taken; they determine its purpose, the resources to be used and also the mutual conditioning with partners in the operating area (Lynch, 2006).

One must also consider that a corporate strategy which produces very good effects must take into account the importance of the supply chain activities both inside and outside the company (Johnsen, Howard, Miemczyk, 2004). According to professionals in the field (Glatzel and Rohren, 2014) the supply chain requires careful evaluation and a sound judgment, irrespective of the market position of the company as it depends on the increasing competition and the shrinking markets. In order to meet properly the requirements and to accomplish the clients' needs, scientific methods must be used, respectively a system to produce the desired effects, namely a chain of values by an efficient flow of materials (Jacobs, 2017).

Other researchers (Johnston, Heinrich, 2013) have shown the importance of analysing the value chain because it is used in the current activity in order to have a clear idea about the socio-economic and power behaviour within the production chain, starting from the initial material to the final product. Some authors (Christopher, 2016) have shown based on scientific demonstrations that the management of the supply chain requires special attention given to the activity of managing relations between all parties involved in order to have very good achievements for all those involved in the supply chain.

Marketing specialists (Kotler, Armstrong, 2017), show the importance of distribution channels; their consequences are very important in terms of the measures taken within the processes in the supply chain. According to other marketing professionals (Palmatier, Stern, EL-Ansary, 2015) each company adopts strategic measures in order to define how to distribute its products, works and services to final consumers. The identification of potential sources plays a major role in the procurement process, as an inadequate measure may require a great deal of effort concerning quality, product, work, service but also delivery in order to be fulfilled (Mena, Christopher, van Hoek 2014).

1. The social function of companies: social and environmental reporting

The importance of the research must be acknowledged especially because solutions may be identified; recognized experiences and analyses provide answers to the challenges caused by globalization which nowadays manufacturers and consumers are facing.

There are researchers who point out that it is important to take into account the realities of today's society, respectively the challenges of increased social inequalities and the emergence of global ecological problems. This reality emphasizes a phenomenon where companies are under intense pressure, especially in terms of taking responsibility for the impact on the society and environment they operate in (Waddock, 2008).

Many companies are perceived as tools that draw consumers' resources for the sole purpose of making a profit, with no minimum concern for the environment they operate in, or minimal interest in somehow returning part of what they have achieved. According to such behaviour, consumers seem a large mass useful for corporate profits only. After making profits in such areas, companies are concerned how to outsource their profits with the lowest costs possible. Methods and ways that can ensure a fast and low cost transfer are sought. This is often the step towards inappropriate, animal-like behaviour. Solutions are being sought to ensure the best transfer in areas where profits are not taxable. The decision makers from the jurisdictions where the profits are made are often required to facilitate such transfers. They are political factors from the legislative or governmental area who can issue and implement special rules, special normative acts which have nothing in common with fair competition.

Being aware of this reality, some authors (Farag, Qing, Mallin, 2015) propose another way of approaching business - the goal of doing business should not aim at maximizing profitability only. They propose a way in which companies' care for both workers and consumers is increased.

Companies should be concerned about the return of profit to those who participated in obtaining it; this would be the proof of ethical behaviour and of supporting the consumers and that company. Actions must be consistent, be distinguishable in that jurisdiction, not occasional and random, and not targeted only for advertising purposes to make future profits. The involvement of companies in such projects must bring important results visible to the general public, thus creating the premises for maintaining a competitive advantage in the respective markets.

However, we need to keep in mind that the parties involved need to be informed about the effect of the actions of companies, especially on people and environment; they are also concerned about economic issues (Ho, Taylor, 2007). Besides, it is believed that if a company procures its resources from society, it will have to return something in exchange (Ho, Taylor, 2007). Therefore, it seems important that companies should be concerned in social and environmental activities and this should be made known to the public.

This concern shows an increasingly stronger relationship with the members of society and thus the social, human element is emphasized. Companies must have this approach in order to gain the respect of the society they operate in, proving this way that they also contribute to the general social well-being, not only to their own welfare.

There are varied concerns and debates of many intellectuals (Ingham, Havard 2017; Sitnikov, Bocean, 2017; Ching, Gerab, Toste, 2017; Allen, 2016; Barnett, 2007; McWilliams, Siegel, Wright, 2006; Porter, Kramer, 2006; Murray, Sinclair, Power, Gray, 2006; Maignan, Ferrell, 2000; Margolis, Walsh, 2003; Orlitzky, Schmidt, Rynes, 2003) regarding the involvement of companies in social and environmental reporting, especially on the type and degree of corporate responsibility to those involved, the financial consequences of this responsibility and its major role for the company. These concerns also include the fact that social and environmental reporting often entails significant costs.

Such involvement may include providing hospitals with high-quality medical equipment, for example fully equipping a hospital department. Costs must be known so that one is aware of the set up costs or the equipment costs for a specialized hospital department. This is of major importance because the focus is on costs and the charitable action; at the same time, the other market participants are informed and a good example of social engagement is set. By highlighting costs, signals are sent to the state authorities regarding the costs of such an action and to control how public procurement is made for similar activities. State controls can be made at public institutions which have done this, but at much higher costs, thus being able to assess the efficiency of how public funds allocated to these public institutions have been spent. Hospital managers can be chosen from the managers in the private system, especially those who are able to make investments at such costs which are suitable for an increased efficiency in using public funds.

Therefore, there are several research studies concerning the lack of relevant causality between social and environmental reporting and the economic benefits of corporations (Ching, Gerab, Toste, 2017; Murray, Sinclair, Power, Gray, 2006). Moreover, it has not been possible to fully clarify whether investments in social and environmental reporting generate higher incomes than costs (Margolis, Walsh, 2003; Orlitzky, Schmidt, Rynes, 2003). Other opinions criticize social and environmental reporting for the evasive advantage on the market by commitment to resources; then, such investments turned into a luxury (Doane, 2005; Norman, MacDonald, 2004).

On the other hand, there are also researchers who support social and environmental responsibility and reporting (Porter, Kramer, 2006; Maignan, Ferrell, 2000). According to their opinions on social and environmental reporting, it represents a way in which organizations can improve their image, value and reputation; then they become a centre for corporate marketing and product differentiation.

2. Economic growth can be sustained by maintaining the competitive advantage

Some authors (Chopra, Meindl, 2015) have argued that the supply chain must constitute the management of relations concerning the obtaining of raw materials and processing the relations with suppliers and clients in order to offer higher value to the customers. Some analysts have warned that the supply chain, in any form, may present risks associated with the challenges of quality, compliance and safety (Dittmann, 2014).

The nature of a business environment in terms of network complexity may be an influential factor in exposing an organization's supply chain to risk. Other researchers have indicated that, regardless of the industry in which a company operates, it is certain that some of its main operational concerns are supply chain disruption and associated costs (Coyle, Langley, Novack, Gibson, 2016). Some scholars argue that supply chain managers must face unexpected challenges in the day-to-day operations of an organization (Bandyopadhyay, 2015).

It is important to study this supply chain of an organization because some costs may be adjusted or eliminated. An example could be that of the costs incurred by a public social welfare institution for social assistance services provided to the beneficiaries. These costs are established according to the minimum needs scientifically identified for a beneficiary per day / month / year time unit. These costs are settled by public budgets at a standard cost per person / time unit. Such activity can be done similarly as an experiment by a private company within a social and environmental responsibility activity by identifying the same needs for a beneficiary / time unit. This activity and the related costs are promoted in order to inform the public regarding social responsibility activities. Thus both the costs incurred by a public institution and those incurred by a private company for the same beneficiary / time unit can be analysed in terms of costs which can be settled by public budgets and by a private company. After such research, state controls on public expenditure efficiency of the social welfare institutions may be carried out, but also on the involvement of managers from the private system acting in public institutions, who have proven able to perform effective activities.

At the same time, it is claimed that companies face increasing challenges in managing the supply chain of their products and services due to political, environmental, economic and technological uncertainties (Mikkola, Skjott-Larsen, Kotzab, 2015). It has been shown that the possibility of disruptions in the supply chain includes poor planning and execution, an intense competitive environment and increased complexity of operations; the focus is on efficiency, outsourcing and unique supply (Manners-Bell, 2014). It is also emphasized that the success of the supply chain management depends to a large extent on the knowledge of the management team on risk management and on the management team's application of the appropriate risk mitigation techniques (Wisner, Tan, Leong, 2015). Other authors consider that any sound risk system should have an action plan able to determine how and what risks need to be addressed (Giunipero, Monczka, Giunipero, 2014).

It seems that managing the supply chain interruption requires identifying the risk source, assessing it and identifying how it will be mitigated. Other authors argue that risk mitigation must have an organizational perspective which must extend beyond the company to the supplier (Schlegel, Trent, 2014). At the same time, according to another researcher, whenever measures are taken to reduce or eliminate risks, the risk profile of the organization will be certainly affected, which will have a direct influence on other parts of the supply chain network (Wisner, 2016).

3. Conclusions and proposals

Therefore the impact on society and the environment in which economic operators perform has an important role. Thus there should be a concern for social and environmental activities at the company level and the public should be informed; his proves a beneficial behaviour for society and environment. This way, companies will be concerned not only about having the highest profit, but also about social and ecological activity. Companies that succeed in including these components in their portfolio will create a competitive advantage in the market and customers will increase the

consumption of goods, products and services offered by these companies based on their concern for social and environmental activities that contribute to improving the quality of life.

Therefore, I propose research of some fields and branches of activity in economy in which guide lines for social and environmental activities for companies are developed, as well as the involvement of companies to implement them and promoting these activities as good practices in order to diversify them. Research can be started among companies which provide medicines, medical equipment, and social assistance.

As for education I propose research and comparisons between the costs for pupils and students settled in the public system by public budgets and the costs for pupils and students in the private system in order to show:

- the standard cost per pupil / pre-schoolers necessary to establish the basic financing funds of the state pre-university education system which influences the expenses incurred by the public budgets,

- the cost per student respectively the necessary cost for establishing the public funding of financing state universities, for Bachelor and Master studies which influences the expenses incurred by the public budgets.

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MARKET OF RECYCLED PRODUCTS

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Abstract:

The purpose of this paper is to provide a comprehensive market analysis of recycled products, to help identify future R&D opportunities and to overcome market challenges and to support economic growth.
In this sense, we will define functional and behavioral particularities in the case of recycled products, peculiarities that form the characteristics of the market for recycled products.
With these characteristics in mind, the need to approach the market for products recirculated by vertical integration (in chain) is emphasized, so that each link, from production to final consumption, must adapt, size and structure so as to ensure the flow of products recycled to the consumer.

Keywords*: circular economy, market, recycled products, particularities, development*

JEL Classification*:* Q21, Q29

Introduction

The market for recirculated products represents an essential component of the economic markets, a component of financing the economy, capitalization of material resources under favorable conditions of yield and opportunities, which should be a main objective of the economic activity in the EU.

The knowledge and prospecting of the markets for recirculated products, the elaboration of development strategies adapted to the prospects of the evolution of the circular economy, the application of economic policies, especially at the microeconomic level, of the companies oriented towards the efficient, cost-effective promotion of the products on the market will have to constitute central objectives of the economic activities. circular.

Description of the Problem

The market for recycled products can be defined physically and symbolically. The physical definition highlights the substantial characteristics of the market, materialized by the direct transfer of the product against a cash flow (cash or payment instrument) from the bidder to the consumer in arranged spaces, within which, regardless of the size of the space, the market partners meet directly.

The symbolic definition emphasizes the formal characteristics of the product transfer, in the sense that the product flow and the money flow are realized concurrently or offset, without the concrete existence of the product, being only necessary to present the characteristics (commercial parameters of the product), assumed by the seller or the bidder at delivery of the goods.Regardless of definition, the market for recycled products is ultimately the space where the production and consumption of these products meet.

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The offer on the market is generated by the production of recirculated products, determined three-dimensionally: by technologies (yields), management and prices, organized production differentiated according to the structural and behavioral characteristics of the market economy.

The market demand is generated by the final solvable consumption of the recirculated products, determined three-dimensionally by:

- size and demographic structure,
- the substantial needs of components (depending on the cultural specificity of the population)
- income, consumption influenced by the economic, organizational and political potential of the national or territorial community.

The price of recirculated products (Figure 1), generated by the confrontation between supply and demand, is influenced by three-dimensional:

- the length of the productive chain of the circulated product,
- the degree of priority of the consumption of the recycled product (abundance of the offer),
- relative prices of products in the economy.

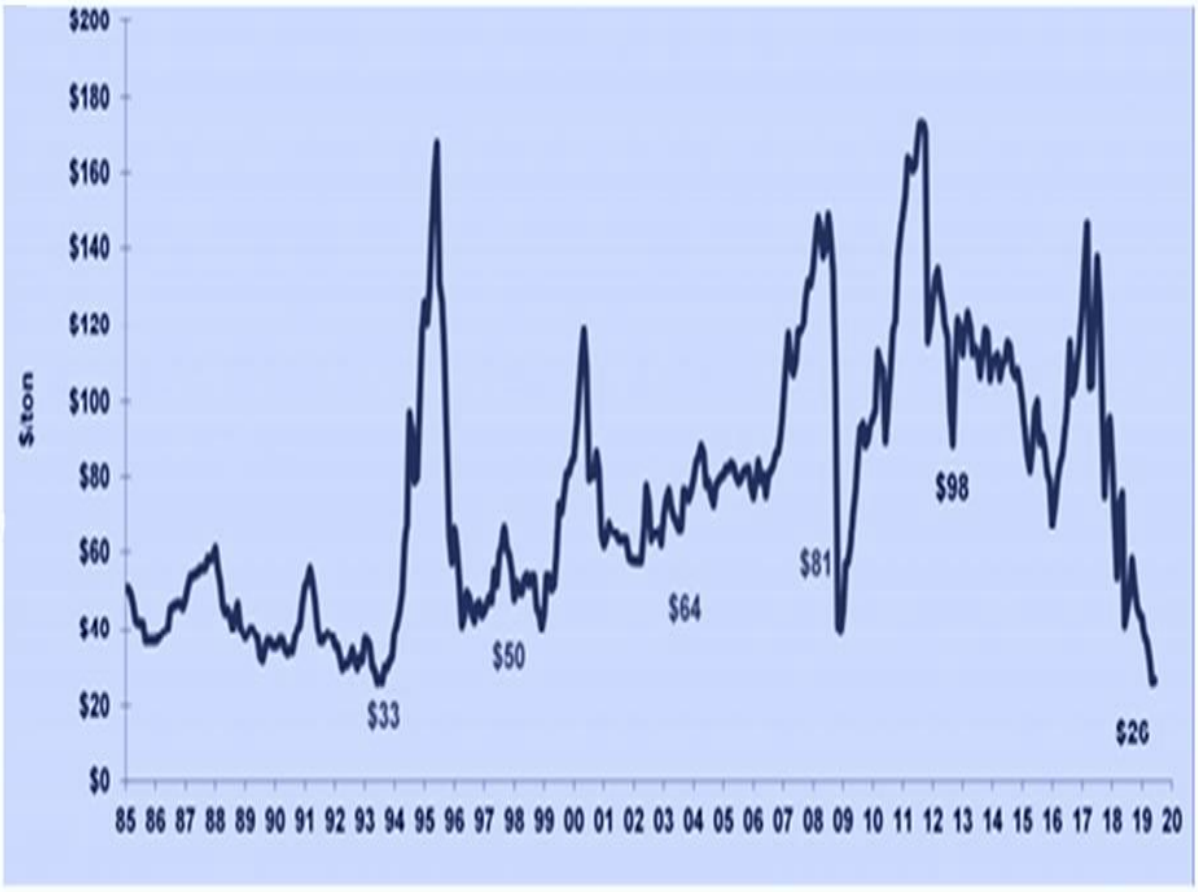

Figure 1: Average Price Curbside Recyclables,1985- 2019

Source: Sound Resource Management Group, 2019

The three determinants of the market - the demand, the supply and the price - acquire functional and behavioral particularities in the case of recirculated products, particularities that form the characteristics of the market of the recirculated products, namely:

-Diversity of recycled products;

-Continuity of consumption which involves adapting the conditions for maintaining the offer throughout the year (temporary outsourcing of the offer);

-Availability throughout the year, supply adapting to the continuity of consumption;

-Differentiation of the destinations of the recirculated products, differentiation realized on the chain of their processing;

-Atomicity of the market of circulated products, integrable atomicity by aggregating the offer on distribution channels.

With these characteristics in mind, the need to approach the market for products recirculated by vertical integration (in chain) is emphasized, so that each link, from production to final consumption, must adapt, size and structure so as to ensure the flow of products recycled to the consumer, taking into account the characteristics of continuity and availability of these products.

Marketing of recycled products

As a member state of the European Union, Romania has the following objectives to be achieved by 2020: minimum 50% reuse and recycling rate of the total mass of the waste, at least 70% preparedness for re-use, recycling and other operations of material recovery of at least 70% of the mass of non-hazardous waste from construction and demolition activities, 60% recovery of the packaging waste from the total packaging placed on the national market.

The marketing of recycled products is constituted as an adequate, creative and operational application of marketing concepts, methods, tools and techniques.

The concept underlying the marketing activity is that of human need, materialized by human desires and preferences, modeled by the personality and culture of the individual.

People have few needs, but almost unlimited desires, in this sense they want products that offer them the greatest satisfaction for the money spent, the desires sustained by the ability to pay are converted into demand, into solvable demand.

The request is covered by products and services of a material and non-material nature.

The essential concepts of marketing are: needs, wants, preferences, demands, products, exchange, transactions and markets. Marketing activities can have a considerable impact on the company through its objectives, namely: maximizing consumption, consumer satisfaction, choice, quality of life.

The evolution of the market approaches from the marketing perspective has gone through several stages, each stage being characterized by the specific focus on the market:

- the production-centered approach is oriented primarily on price, saying that lowering costs, increasing production and distribution efficiency is the main approach to the market;

- the product-centered approach is oriented on the utility characteristics of the product, on its quality, on the product's performance, aiming at improving them and conquering the market by brand, by favoring differentiation of the products on the market;

- the sales-focused approach is focused on the promotion and distribution of products so that the product image is sold, creating a favorable perception of it by consumers;

- the customer-centered approach, addresses the needs, preferences and wishes of the customer or the consumer, aiming at satisfying them both by adapting the utilities of the product to the requirements of the client, and by the services that accompany the sale of the product;

- approaching the social marketing, tries to integrate, through marketing, the product in the general societal requirements, aiming both at reducing the negative externalities of the product, as well as its production, externalities of ecological, educational, cultural nature, etc., and also ensuring the temporal perspective of product consumption (sustainable consumption).

Marketing still in its early stages in the U.E. it is confined to the first two approaches, and this in an inconsistent and inadequate way to the requirements of production and marketing.

Obviously, the customer-centered approach, and especially the corporate marketing, represents the way to achieve a positive integrability of the recycled product, from the following points of view:

-production and profit;
-consumption and utility;
-of diminishing the impact and negative externalities of the product;
-of harmonizing short and long term perspective (ensuring sustainable consumption),
-of placing the product in a cyclic chain of reproduction of its substantial content.

In carrying out the marketing process, to satisfy the needs of the consumers, the marketing operators can sometimes act in a way that affects the quality of this satisfaction, by creating false needs, by promoting the exaggerated consumerism, by the cultural pollution etc.

In this sense, evolving the human marketing, oriented towards the consumer, innovation, the creation of authentic values, the culturalization of the needs, promoting the defining principles of the marketing policy, namely:

-the freedom of the consumer and the producer;
-avoiding potential harmful effects;
-meeting basic needs;
-economic efficiency;
-innovation,
-consumer education and information;
-consumer protection.

The promotion of these principles at the company level, under the conditions of entering the market, maintaining and expanding the market, requires the integration of marketing, marketing objectives, tools and techniques into the strategic vision of the companies, a vision that implies the achievement of the company's profitability and survival wishes.

It is therefore necessary to develop a long-term survival and development strategy, marketing being an essential element of strategy building, strategy embodied in marketing plans, programs and policies, having specific objectives for the company's activity, its mission.

The strategic plan represents the fundamental instrument for promoting the marketing vision, which allows the expansion of the product on the market materialized in:

- entering other markets,
- expanding the market,
- product development,
- diversification.

This plan constitutes a coherent set of decisions that allow the creation and maintenance of the long-term balance between the possibilities and objectives of the company, on the one hand, and the opportunities created on the dynamic market specific to the company, having the following components:

- the mission of the company (the general objective of the company);
- the long-term, strategic requirements of the company;
- adaptive reconstruction of the plan according to the new conditions of evolution;
- analysis of the external and internal environment of the company;
- analysis of the company's portfolio of activities;
- goals and ways to achieve them.

The implementation of the strategy within the company involves the proper development of the marketing process, in the center of which the consumer is, the company focusing on differentiated market segments, and developing marketing policies (marketing mix) that will allow to adapt the offer and position the company within market segments.

The marketing mix is the key component of marketing practices, representing a set of tactical controllable tools that the company uses in order to generate the desired reactions on target markets.

This includes the set of elements that a company can use to influence the demand in a favorable way to the product or, the elements being grouped into four categories of variables namely: the product, the price, the placement (distribution) and the promotion

Conquering, maintaining and developing the market by the company involves identifying the opportunities that the environment offers, these being made up of all the factors that influence the potential of the company to make profitable transactions with its customers.

The company environment is composed of:

- internal environment (functional, organizational, decision-making);
-the market of supply and demand consisting of distribution companies, customers, competitors, etc.;

-the macromedia, consisting of demographic, economic, technological, cultural, etc. factors.

An important component of the company environment is represented by the external, global market, which is characterized both by favorable opportunities and opportunities, as well as by risks and dangers that can affect the performance and parameters of the company activity.

Global marketing, as a way to promote the company's products internationally, takes into account the characteristics of the international commercial system, of the national markets that the company wants to penetrate, establishing the appropriate ways to enter these markets. In the conditions of expansion of companies on foreign markets, the competitive aspects, in terms of quality, operability, services, facilities etc. they become decisive in the construction of marketing policies.

Currently, the promotion of an active, conquering marketing strategy requires the availability of a large volume of information to ensure knowledge of all the aspects involved in the elaboration and implementation of this strategy and in this sense marketing research becomes the vanguard of marketing policies, creating relevant information and differentiated to the specific aspects and objectives, assuming the information sequencing.

On the other hand, Romania recycles only 5% of the municipal waste annually, occupying, at a great distance from the next ranked, the last place in the European Union (Figure 2).

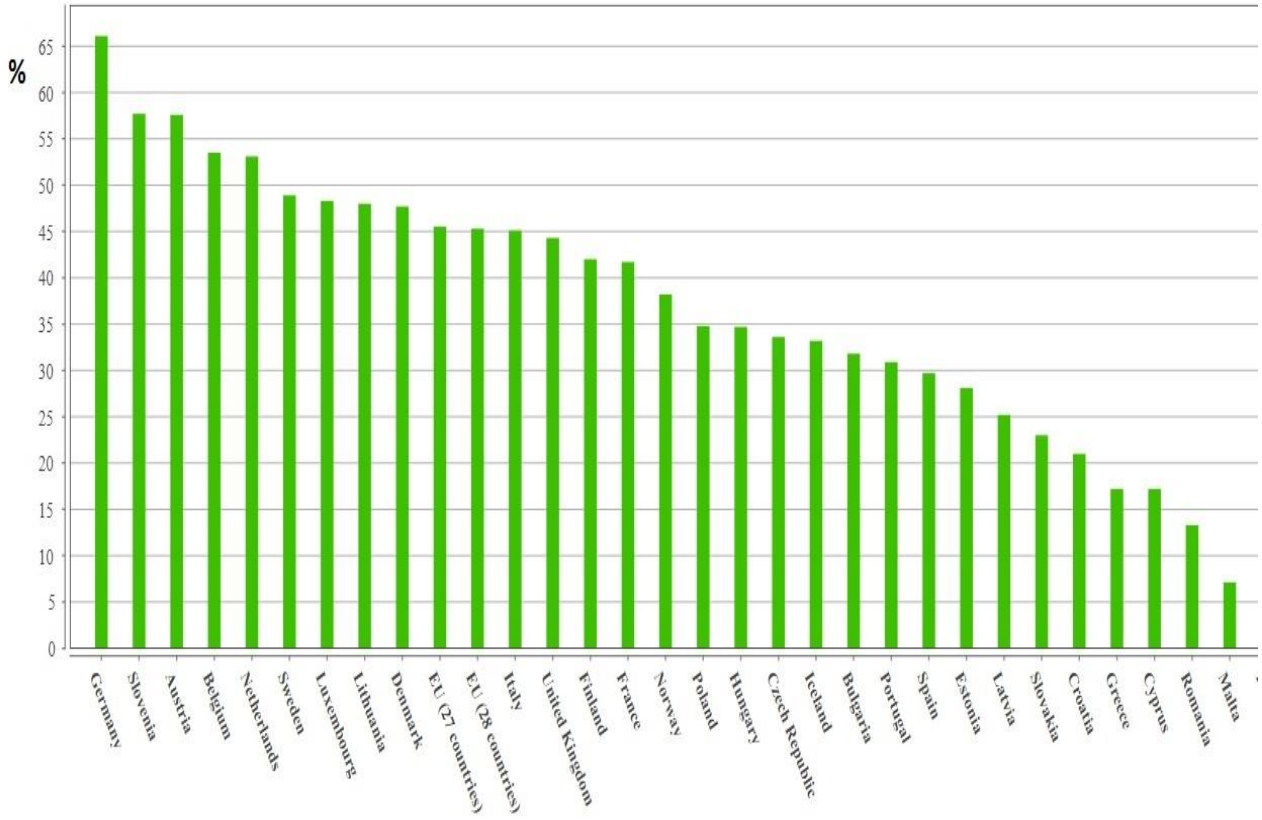

Figure 2: EU Municipal Waste Recycling Rate 2017

Source: Eurostat data, 2017

Thus, with regard to the general recycling rate of municipal waste, Romania recorded the largest increase over the period 2008 - 2014, which was over 14.5 times. With all this spectacular growth, in 2014, Romania places a 13.1% recycling rate on the forefront of the European Union, outpacing only Malta and Slovakia. Also noteworthy is the average 43.9% recycling rate of municipal waste, registered at the level of the European Union. At the opposite pole of Romania, over 50% are: Germany, the Netherlands, Austria and Switzerland (non-U.E.).

Taking the last place in the EU Member States' classification on packaging waste involves the possibility of applying the infringement procedure. In Europe, especially in countries with a functioning system, recycling is supported by various economic measures and instruments.

By 2020, Romania will have to recycle 50% of the total mass of municipal waste. According to estimates, the targets for packaging waste will be achieved this year by producers, accounting for only about 13% of the 50% demand.

Throughout the waste management chain, each actor must bear the responsibility of costing: producer, citizen and local authorities. At present, those who fulfill all their obligations in this chain are only producers, those who place packaging waste on the market.

Thus, if public authorities would ensure the financing and infrastructure of the value and recycling system, the recycling rate will increase. Moreover, the authorities are responsible for implementing economic instruments to boost the value-added business environment, one of the controversial measures being the so-called "pitfall" (postponed to take effect in 2014).

Legislative changes introduced from 2015 to the present day have regulated the system and have had a positive impact, and as a immediate effect has been the signi fi cant increase in the collection and recycling of packaging every year. Thus, the packaging recycling rate increased 1.64 times, at the level of Romania, over the same period of time, from 33.5% to 54.8%. The registered growth places Romania on the second place at the level of the European Union (which recorded a general increase of 5% from 60.5% to 65.5%), being surpassed only by Cyprus.

The 54.8% rate places Romania in the second part of the European ranking, surpassing only Liechtenstein, Malta, Croatia and Greece. It is important to mention that Romania places at the level of 2014 about 29.84% of the EU average rate of municipal waste recycling and at 83.66% of the EU average in terms of the recycling rate of the packaging. At the level of the national economy, the evolution of the sector of the NACE 38 companies had a downward trend over the analyzed period. At the level of 2014, the number of active companies is 2904, which represents only 65.41% of the number of active companies in 2008. The registered decrease caused the sector to decrease its share in the total economy (total number of active companies) from 0.67% to 0.48%.

Benefits improve waste management in Romania

In Romania, 82% of the waste is stored instead of being recycled. It is the highest percentage in the European Union.

The development of waste recycling will create over 20,000 jobs in Romania and over € 3 billion in revenues to the Romanian budget through the full implementation of current legislation on waste.

Just the very small, the smallest percentage of waste recycling in the EU, namely 5%, shows that Romania has huge potential for growth, said Kestutis Sadauskas, director of the European Commission's circular economy.

One way to improve waste management in Romania is to charge garbage dumps, and the amounts to be used to develop recycling infrastructure. Awareness of the population, increased controls by the authorities, the use of European funds can contribute to the development of the circular economy. The transformation of waste into raw materials has a major impact on environmental protection and industrial development in Romania.

In Romania, SMEs have invested in 2015 about 5% of the turnover for efficient use of resources, compared to the 50% average in the EU. and about 35% of them take measures to save energy and materials, compared to the EU average of nearly 60%.

The results of the Ecoinnovation Scoreboard in Romania have been depreciating since 2016 as eco-innovation activities have declined. Romania continues to demonstrate increased use of material, water and energy resources, but low resource productivity.

There are continuous challenges in municipal and industrial waste management, with very low recycling rates of 5% and a very high storage rate of 85%. Illegal waste disposal is frequent. Managers who are willing to make the transition to circular economy is the private sector because companies invest more in resource efficiency than in the past (especially measures to save energy - 30% of companies and measures to minimize waste - 31% of enterprises) (Flash Eurobarometer 456, 2017). In addition, many SMEs in Romania intends to offer green products and services in the

next two years (19%), which is a sign that they are beginning to understand the value of these investments (Flash Eurobarometer 456, 2017).

Entrepreneurs have also identified opportunities in the waste or materials used with a number of increasingly large circular activities and developing new business models around reuse and repair. However, most production companies do not adopt life cycle thinking and actions continue to consider environmental costs as a burden in taking measures to resource efficiency.

While initiatives on the circular economy have begun to develop, more governmental support is needed to reduce them. With the adoption of the General Waste Management Plan in Romania in 2017, a major milestone was achieved, thus meeting one of the conditions for receiving EU funds.

Conclusion

The transition to the circular economy should be a priority for the Government of Romania, as it is a means of sustainable economic development. Appropriate policies and investments are needed to support the transition of economic agents to the green economy. These policies should take into account national, regional and local particularities and be implemented from bottom to top.

To this end, the Romanian government should engage in the following actions: to formulate and implement concrete action plans and policies to increase the competitiveness of economic agents so that they can achieve green growth; encourage companies to produce green goods and products, services for the green market in rapid growth; to develop and implement policies and strategies for eco-innovation; to provide important help in the transition to the green economy; to ensure that efforts remain for the transition to the green economy; to identify the most appropriate measures to promote and accelerate organic growth in Romania.

Government ministries should recognize the need to continue investing in green skills and workforce education towards sustainable development, adopt policy measures to promote environmental education; the existence of an action plan that prioritises the greening of production and consumption; to strengthen cooperation between the public and private sectors; to create tax incentives to invest in the greening efforts of economic agents. An important role will also be the implementation of simplified accounting procedures for economic agents; developing and organizing training programs for home entrepreneurs - and improving the quality of entrepreneurship; to increase opportunity-based entrepreneurship through state funding, educational programs, creating green innovation opportunities and green economic growth initiatives; the development and implementation of legislation on environmental entrepreneurship.

The Green Action Plan (GAP), proposed by the EC in 2014, aims to help economic operators transform environmental challenges into opportunities, focusing on resources, efficiency, entrepreneurship and environmental skills. Making and facilitating SMEs' access to The market also offers tools to internationalize them.

Within the EU, Romania ranks last in terms of economic indicators of innovation and competitiveness. Barriers to the ecological development of Romanian businesses include lack of investment; lack of specialized knowledge; lack of efficient management of available resources, leading to economic growth; poor access to finance; Excessive regulatory burdens.

Positive trends in the eco-innovation initiatives undertaken by the Romanian organic industry include: increasing jobs and turnover; the implementation of energy-improvement measures, efficiency in residential and public transport, and the promotion of the exploitation of renewable energy (biomass, wind, geothermal, solar and hydroelectric power) over the last decade; collaborative platforms and joint funding for eco-innovation initiatives in local companies; the promotion of green public procurement, - strategies and policy programs specifically addressing green innovations, infrastructure development and the improvement of the entrepreneurial environment; the adoption of EU environmental regulations.

Ensuring energy efficiency and renewable energy has received the greatest incentive in terms of fiscal incentives and funding available in 2013, using a generous government sponsorship to support renewable energy investments.

Romanian economic agents need to introduce environmental improvements for their operations in order to reduce costs and comply with regulatory requirements. Many of them are interested in sustainable development actions such as the use of ecological resources, clean production processes and biodegradable materials.

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THE PARTICULARITIES OF INSURANCE MARKETING IN THE CONTEXT OF SUSTAINABLE ECONOMIC DEVELOPMENT

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Abstract:

Improving the professionalism and competitiveness of insurance companies depends largely on the improvement and future development of insurance marketing. The main functions of insurance marketing are taken into account and its specificity, the development of insurance marketing at the current stage is evaluated. The current state of the insurance market is analyzed and the main trends in insurance marketing in the Republic of Moldova are highlighted. Also defined the ways how to increase the effectiveness of marketing activities of insurance companies.

Keywords: *insurance, marketing, insurance market, insurance marketing trends, insurer's marketing strategy.*

JEL Classification: *M31, G22*

Introduction

Under modern economic conditions, the central figure of the insurance market is the insured, whose interests and needs in the field of insurance protection determine the activities of any insurer. Insurance companies spend large amounts of money to improve the organization of sales of insurance policies, improve the quality of customer services and maintain their image. Therefore, it is fair to say that increasing the professionalism and competitiveness of insurance companies is largely dependent on the improvement and future development of insurance marketing.

Distinctive features of consumer behavior in the current stage are the lack of confidence in the insurance market and the poor awareness of the need for insurance in enterprises and population.

The main difficulties of marketing the insurance products are solving the problems of building and improving the relations between the insurance company and the customer using the proposed insurance product. The contact points between these relationships appear when the insurance market is formed and require a general structural adjustment of the insurance company, so that the activities of all structures are oriented to the client's interests. To achieve this, a marketing approach is required in the management of the insurance company's activities.

The experience of using marketing in the market activities of foreign insurance companies shows that the marketing process includes a series of actions that can be reduced to two main functions: generating demand for insurance services and satisfying insurance interests.

Description of the problem

From the point of view of economic theory, the formation of the demand represents an effect oriented on the potential buyers to increase the current level of the demand to the desired level, approaching the offer of this company. From the point of view of marketing in relation to the insurance market, this function includes, first and foremost, a series of measures to attract customers to the services of this insurance company.

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Another main function of marketing is to satisfy insurance interests. The implementation of this function through a high culture of insurance services is the key to the availability of demand for insurance services.
As a concept, insurance marketing was founded in the 70's of the 20th century, with a model reflected in Figure 1.

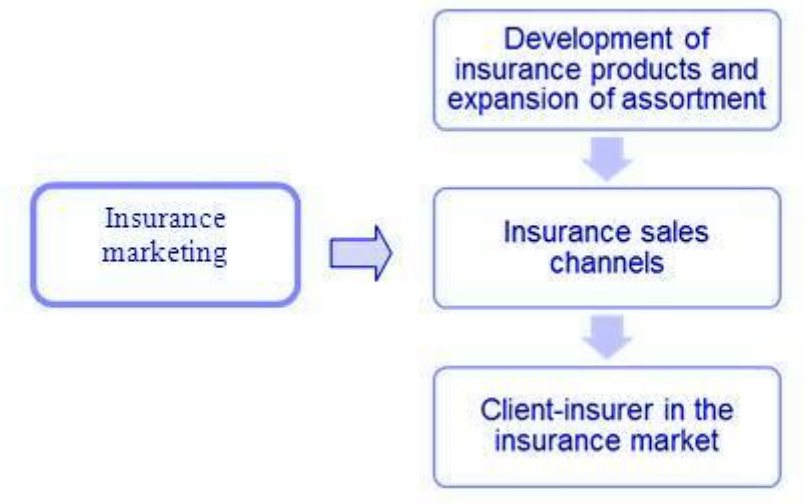
Development of insurance products and expansion of assortment
Insurance marketing
Insurance sales channels
Client-insurer in the insurance market

Figure 1. Insurance Marketing Model in the 1970s

Source: adapted by the author after Crosby L.A., Stephens N.

The objectives of insurance marketing are: training and stimulating the demand, ensuring the solidity of the decisions and management plans of the insurance company, as well as expanding the volume of services, market share and increasing the profit.

A real assessment of the needs of the insurance market and the ability to provide the clients with the insurance services they need now play a major role in the internal insurance market. A strong influence on changing the attitude towards the insurance marketing system is exerted by the expectations of a massive entry on the national market of Western insurance and financial companies.
The liberalization of the insurance market worldwide, generated in the middle of the 20th century discussions about the positive impact of the idea of the existence of insurance marketing. American professor G. Scriper says that due to the increase of the share of foreign participants in the internal insurance markets, there is a strong competition, there are reasons for improving the spectrum of insurance products, offering higher quality services and looking for cheaper marketing tools in customer service [1, pp. 405]. According to the American economists M. Gras and R. Klain, the quality of service is an area, which is currently gaining more attention, especially if it includes the activity of marketing the insurer in the field of marketing and further financial consulting [2].
American scientists R. Carter and Dj. Dichinson in his research states that the high level of foreign participation in the insurance market generates the improvement of the service and the importance of the client [2].

Methodology and data sources

Currently, insurances, which have shifted from the state insurance monopoly to the rebirth of the insurance market, remain behind the needs of the economy. On the market of the Republic of Moldova, this state of affairs is due to the reduced financial capacity of the national insurance companies to insure major risks, which is due to:
- poorly developed insurance infrastructure and methodology for calculating tariffs for non-standard risks;
- small amounts of authorized capital, insurance reserves of insurance companies;
- lack of experience in performing insurance (including insurance risk assessment, risk management, damage assessment).

The main criteria for the development of the insurance market are the increase of the incomes of the households, the increase of the solvency of the enterprises and the purchase by the population of some expensive properties (cars and real estate).
At present, there is an urgent need to transform the social relations existing in the insurance market.
Today, the insured acts initially as a "weak part", not having the possibility to influence the formation and execution of the insurance contract. Therefore, a transition from the seller's insurance market to the consumer insurance market is necessary, a possible transition through the implementation of insurance marketing.
Insurance marketing is a management system that includes:
- a reasonable choice of certain objectives and strategies for the operation and development of the insurance company as a whole, aimed at finding the most efficient combination of development of a new insurance product with existing or modernized types of insurance, as well as abandoning insurance without demand or processing substantial of them;
- an integrated approach of connecting the objectives with the capabilities of the insurance company, developing ways to achieve the objectives;
- identification of promising areas of insurance activity.
In terms of management activity, insurance marketing includes:
- the study of the demand for a certain insurance product;
- formation of a marketing program for insurance products;
- setting the upper and lower limits of the tariff rate, the estimated profitability;
- formation of the investment policy of the insurance company;
- clarification of the expected result of the economic activities of the insurance company.
It is worth noting, however, that the insurer that focuses on marketing in its activities must be aware of the following important idea. It offers not only insurance policies, but offers a solution to the specific problems of the insured who is bothering him at one point.
The strategic management of the insurance company is a certain succession of actions: identifying problems in the operation of the insurance company, determining the main mission and objectives, evaluating and analyzing the external and internal environment of the company, developing and analyzing the strategic alternatives, choosing a strategy and implementing it , evaluating and monitoring the implementation of the strategy.
In the process of identifying problems in the operation of the company, it is necessary to focus not on the symptoms, the manifestations, which lead to undesirable consequences for the company, but to identify the contradictions in the company's activities, which generates the main negative consequences on its activities.
The definition of the insurance company's mission is to establish the significance of the company's existence, its purpose, role and place in a market economy.
One of the criteria for evaluating the effectiveness of the insurance company's marketing strategy is to maximize the financial result, provided that the entire range of marketing tools is used. The reason for choosing one of the marketing tools is determined by the insurer's preferences for the remaining components of the marketing policy. For example, choosing a marketing system depends on the characteristics of the insurance product and the nature of the insurance risk cover and also affects the insurer's pricing policy. It is also necessary to take into account the dynamics of the development of the insurance products and services market, which are the key elements of the insurance companies' marketing strategy.
The main elements of the marketing strategy of the insurance company are:
- positioning the company's insurance products and services, by identifying the potential geographic, social, demographic market segments of the company, to which the insurer intends to direct your efforts;
- creation of promising and sought after insurance products and services;
- formation of a program to stimulate the sale of insurance products and services;
- development of the life cycle of insurance products and services;
- assessing the prospects for developing potential markets and the effectiveness of marketing activities in the insurance market.
Effective marketing strategies give insurance companies the opportunity to choose the most promising target segments and to develop an appropriate marketing mix for them.
Figure 2 shows the modern model of insurance marketing.

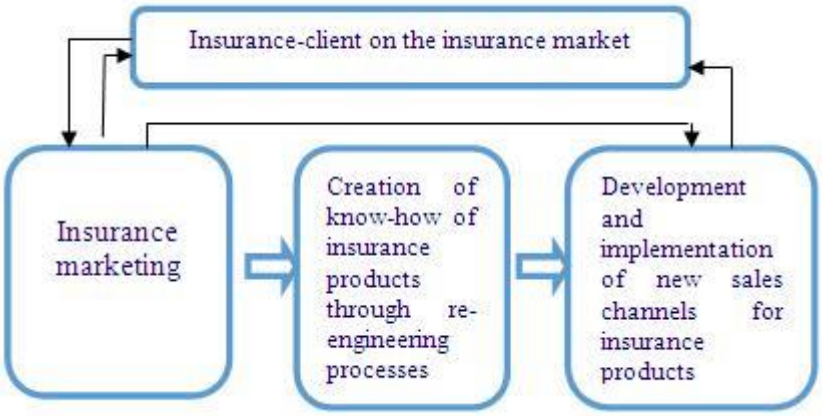
Insurance-client on the insurance market
Insurance marketing
Creation of know-how of insurance products through re-engineering processes
Development and implementation of new sales channels for insurance products

Figure 2. The modern model of insurance marketing

Source: adapted by the author after Ryals L.

The practical marketing of the insurance company is based on the following basic principles:
- rapid response to insurers' requests;
- implementation of innovations;
- an in-depth and multilateral analysis of the insurance market conditions, as well as consumer demand and needs;
- the impact on consumer demand formation, for which production is interested.

Studies of foreign authors rely on the following "Sustainable Insurance is a strategic approach where all activities in the insurance value chain, including interactions with stakeholders, are done in a responsible and forward-looking way by identifying, assessing, managing and monitoring risks and opportunities associated with environmental, social and governance issues. Sustainable insurance aims to reduce risk, develop innovative solutions, improve business performance, and contribute to environmental, social and economic sustainability" [4, p. 3].

Principle 1: We will embed in our decision-making environmental, social and governance issues relevant to our insurance business.

Principle 2: We will work together with our clients and business partners to raise awareness of environmental, social and governance issues, manage risk and develop solutions.

Principle 3: We will work together with governments, regulators and other key stakeholders to promote widespread action across society on environmental, social and governance issues.

Principle 4: We will demonstrate accountability and transparency in regularly disclosing publicly our progress in implementing the Principles. Source: UNEP [4, pp. 4–5].

In terms of engagement with regulators, these possible actions are stated under Principles 3 and 4 [4, p. 5]:

"Support prudential policy, regulatory and legal frameworks that enable risk reduction, innovation and better management of environmental, social and governance issues"

"Dialogue with governments and regulators to develop integrated risk management approaches and risk transfer solutions"

"Dialogue with clients, regulators, rating agencies and other stakeholders to gain mutual understanding on the value of disclosure through the Principles" [4, p. 6].

Results obtained

Insurance marketing includes the implementation of the sales policy, which involves determining the order, systems and methods of promoting the insurance product, calculating possible advertising costs, training agents, etc.

The factors that have led to the rapid growth of the insurance and reinsurance activity on the international insurance market are:

- The unprecedented economic growth of the industrialized countries after the Second World War, the technical progress and the socio-human development under all the aspects that made new needs appear;

- Changes in the structure of insurance markets in many parts of the world, determined by the measures adopted in some countries, in order to exclude or limit the activity of foreign insurance companies in their territory;
- Improving the climate in the field of direct business;
- Globalization of financial services in general and insurance services in particular.

The planning of marketing strategies and tactics has the task of not only capturing the insurance market, but also implementing constant control over demand formation to restructure strategic programs and competitive tactics in the right direction at the right time. In the last years before the onset of the crisis in our country, there was a significant increase in the interest for insurance. The consequence of this was the increased competition in the insurance market, which gave impetus to the development and improvement of insurance marketing.

Conclusions

Assessing the evolution of insurance marketing in the current state as a whole, it should be noted that, although insurance activity has registered a significant development in recent years, insurance marketing in our country is still insufficiently developed compared to the advanced foreign countries.

The low level of insurance culture in most of the country's population, the lack of confidence of the insurers in the domestic insurers, the limited demand for insurance services - all this is largely due to an insufficient organization of insurance marketing and poor advertising on the insurance market.

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INVESTMENT DEVELOPMENT PATH – THE CASE OF ROMANIA, POLONIA, HUNGARY AND BULGARIA

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Abstract:

The level of development of a country can be measured with the help of investment development path. In this paper we aim to explore the case of Romania and see its evolution through the investment development path stages and make a comparison with former communist countries Poland, Hungary and Bulgaria, that became members of the European Union. To realize this comparison, we calculate the net outward investment for the selected countries and analyze their evolution. The investment development path is a tool used to evaluate the link between foreign direct investments and the gross domestic product of a country. We must acknowledge that this is only a side of the economic development of a country and the quality of the foreign direct investments is very important.

Keywords: *investment, European Union, communism, development.*

JEL classification: *F21*

Introduction

Foreign direct investments (FDI) represent an important part of the world economy as they are the tool not only for money transfers, form a country to another, but also managerial information and technology. Romania and the other countries from the communist block benefited from this source to accelerate the transition process to the free market economy and after that to accelerate country development. We must acknowledge that not all countries have the same characteristics and their development is influenced by them (Bellak, 2001; Bensebaa, 2008). Also, some FDI activities from the early years of the analysis were subject of corruption and "greasing the wheels" was a practice of those times. This had an important influence on the speed of country transition to capitalism, as corruption tends to slow development and potential investments from powerful multinational enterprises (MNEs) are driven away by the economic environment inside the country. Therefore, in the first years the level of inward FDI was low. After this period, which varies from country to country, the level of FDI begins to grow fast until 2008 when the international financial crisis affected all countries. After 2008 we see that the level of inward and outward FDI of Romania remains almost constant.

Our focus is to see how Romania and three other countries: Poland, Hungary and Bulgaria advances through the Investment Development Path (IDP) in the analyzed period and try to explain how they follow the theory and why there are some discrepancies.

Description of the Problem

Lately the FDI flows began to change from the initial direction from developed to developed and developing countries, in a hybrid multi-direction between the two groups. Also, now, FDI is not realized only by the MNEs as new entities became involved in greenfield, or cross borders mergers and acquisitions like sovereign wealth funds, private equity firms, state owned companies or international financial organizations (Voica et al, 2018). Also there has been a surge of new MNEs

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from developing countries like China, India or Brazil that invest massively in US or EU (Dohse et al, 2012)

We have witnessed the change in paradigm of the developing countries from the beliefs that MNEs are the hand of imperialism that keeps them in underdevelopment (Narula and Pineli, 2016) and a risk to their economic and political sovereignty (Narula and Driffield, 2012) to engaging in a race to attract FDI by removing barriers and acknowledging the positive effects of FDI on the host country countries (Matei, 2004; Subic et al. 2010; Zaman et al. 2011; Zaman et al., 2012, Iacovoiu 2013; Zaman and Vasile, 2012, Anghelache et al., 2014; Popescu, 2014; Munteanu, 2015; Stancu and Iacovoiu, 2015; Anghelache et al. 2016; Iacovoiu and Stancu 2016; Podasca, 2017; Panait and Dusmanescu 2017; Panait and Voica, 2017).

In this new environment it is necessary to revisit theories like the IDP and see if they apply to the new conditions. The IDP theory has been first suggested by J. Dunning at the beginning of the 80's and after that Dunning and other researchers developed the theory (Dunning, 1986, 1997; Dunning and Narula, 1994, 1996, 2002; Narula and Dunning 2000; Lall, 1996; Durán and Úbeda 2001, 2005).

The IDP starts from the assumption that the flows of FDI are influenced by the level of development of the host country. If a country is underdeveloped, it has not the economic power to create outward FDI, even the level of inward FDI is very low as the potential investors seek different advantages to operate in a certain country in order to generate profit.

As the country develops it becomes more attractive to potential investors who will invest in it and by doing so contributing to further development of the country in an accelerated way. As the level of development becomes higher the country starts engaging in outward FDI.

The IDP is a framework that uses the net outward investment per capita (NOI/capita) position calculated as the difference between outward FDI and inward FDI and the gross domestic product per capita (GDP/capita) as a proxy for country development. The construction has five stages of development (Dunning and Narula, 1996; Buckley and Castro, 1998, Narula & Dunning, 2010, Narula & Guimon, 2010) and we can see an illustrative draw of the graphic in Figure 1.

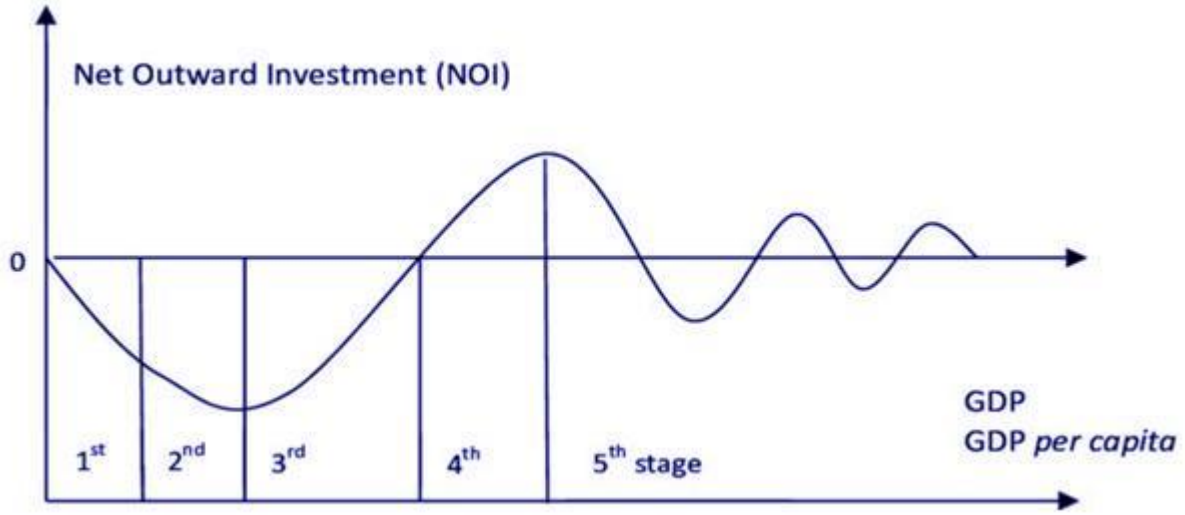

Figure 1: The Investment development path evolution

Source: adapted from Dunning & Narula (1996)

In the first stage we find the least developed countries or underdeveloped which don't have the advantages needed to attract potential investors. These countries have a low level of inward and outward FDI. Many times, outward FDI are inexistent and the inward investment mainly target natural resources.

Stage 2 countries have an ongoing development of specific location advantages like improvements in infrastructure and a bigger national market. In this stage the level of inward FDI is increasing and targets labor intensive industries and branches of manufacturing.

This is the stage where the inward FDI begins to have an important impact on GDP and has a higher rate of growth than it. Outward FDI keeps low as local companies don't have the strength to sustain activities outside their borders.

Stage 3 countries don't record the same increase in inward FDI, and they may be exceeded by outward FDI. Domestic companies become stronger in this stage and more competitive and will involve in resource seeking investments in developing countries and asset or market seeking in more developed countries. Countries from this stage have a good infrastructure and a working legal system.

In stage 4 the outward FDI is increasing faster than inward FDI and NOI is becoming positive for the first time. This was the last stage in the first form of IDP and is typical for the developed countries.

Stage 5 countries see a fluctuation of NOI indicator around zero with very high levels of inward and outward FDI. This is specific to the most developed countries.

Methodology and Data

In our analysis of the IDP we used the following steps of GDP/capita: stage 1 – under 2,500$, stage 2 – 2,500 to 10,000 $, stage 3 – 10,000 to 25,000 $, stage 4 – 25,000 to 36,000 $ and stage 5 – over 36,000 $.

Our focus is in the evolution of FDI and IDP in Romania compared with three other countries from the former communist bloc. The three countries chose for the comparison are Bulgari, Hungary and Poland.

We chose Bulgari because is the country that has been accepted in the EU at the same time with Romania and it is its southern neighbor. We chose Hungary as it is its only other neighbor that is an EU member.

Poland was chosen as the champion of economic development of the former communist states and member of the EU.

The indicators used in the analyze are inward and outward FDI stock, GDP, GDP per capita and the population. All the data was extracted from United Nations Conference on Trade and Development (UNCTAD) for the period between 1990 and 2018.

We started from 1990 as then the communism countries became independent and started the path towards capitalism. The data was available until 2018 thus the finish year of our analysis.

We used the inward and outward FDI stock to calculate the net outward investment position (NOI) using the following formula:

$$NOI = OFDI - IFDI$$

Where: NOI – net outward investment
OFDI – outward foreign direct investment
IFDI – inward foreign direct investment
After calculating NOI we calculate NOI/capita, using the population, and along with the GDP/capita we will obtain the data necessary to draw the graphic representations which has as its x axis the GDP/capita and as its y axis the NOI/capita. According to Dunning and Narula (1996) the evolution of a country through the 5 stages of the IDP should look like in Figure1.

Results

The GDP is one of the most used indicators to evaluate the economic development of a country. Therefore, we start our presentation with analysis of GDP which can be seen illustrated in Figure 2.

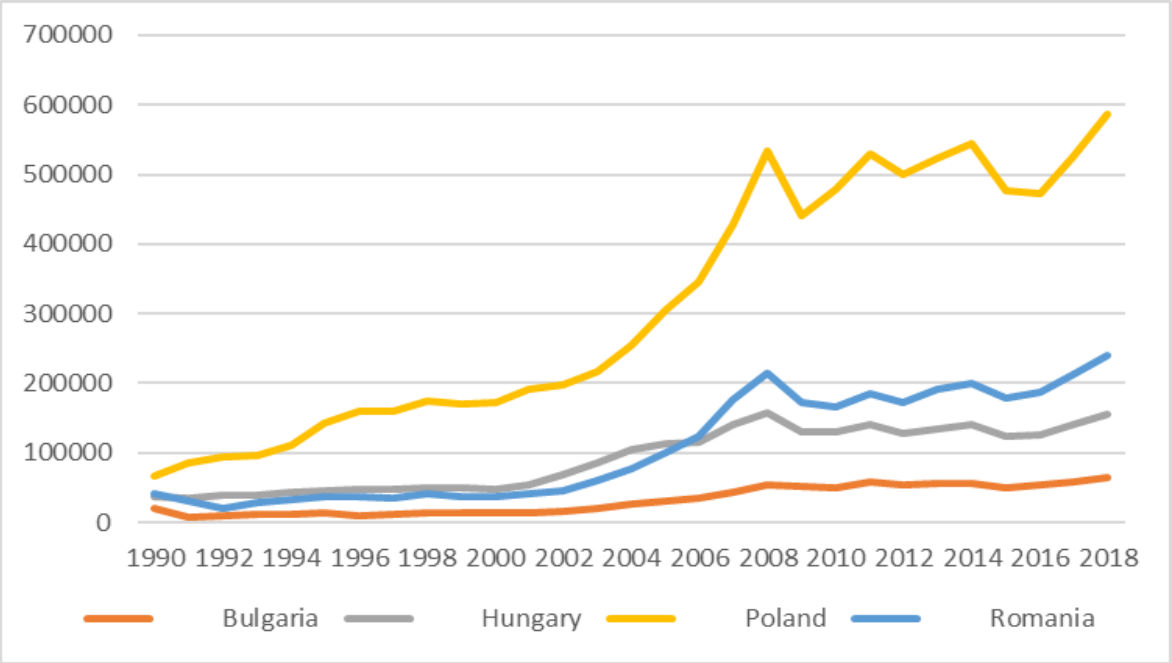

Figure 2 – GDP for Bulgaria, Hungary, Poland and Romania, 1990-2018 (million USD)

Source: authors calculation based on data from UNCTAD

In 1990 the total GDP of the four countries was around 164 billion USD, 40% was generated by Poland, 25% by Romania, 23% by Hungary and 13% by Bulgaria while in 2018 the total GDP of the four countries was around 1 trillion USD, 56% was generated by Poland, 23% by Romania, 15% by Hungary and 6% by Bulgaria. Therefore, we say Poland is the champion of former communist countries and surely out of the four selected in this study. Romania managed to keep almost intact its share in the selection losing only 2% while Hungary lost 8% and Bulgaria 7%.

In terms of population Poland is the only country that had positive evolution with a positive trend with an increase of 0.4%. The rest of the countries had a negative trend, Hungary with a decrease of 6.6%, Romania with a decrease of 16.6% and Bulgaria with a decrease of 20.4%.

The inward FDI had a similar evolution as the GDP and it is illustrated in Figure 3. The total inward FDI for the four countries was 463 billion USD in 2018 from which Poland accounted for 50%, Romania for 20%, Hungary for 19% and Bulgaria for 11%.

From the IDP point of view the level of inward FDI compared to the level of development is consistent with the theory as in the analyzed period all four countries pass from stage one to stage three.

Throughout the analyzed period the four countries had similar evolution with the difference that Poland and Hungary had higher growth rates than Romania and Bulgaria. Until 1998 Hungary was the leader by the level of inward FDI and from there on Poland took the lead until the present days. All countries saw an increased level of inward FDI between 2003 and 2007, but after the international financial crisis the trend has been disrupted for Romania, Hungary and Bulgaria, apart from Poland which had a growth of inward FDI higher than the other three countries.

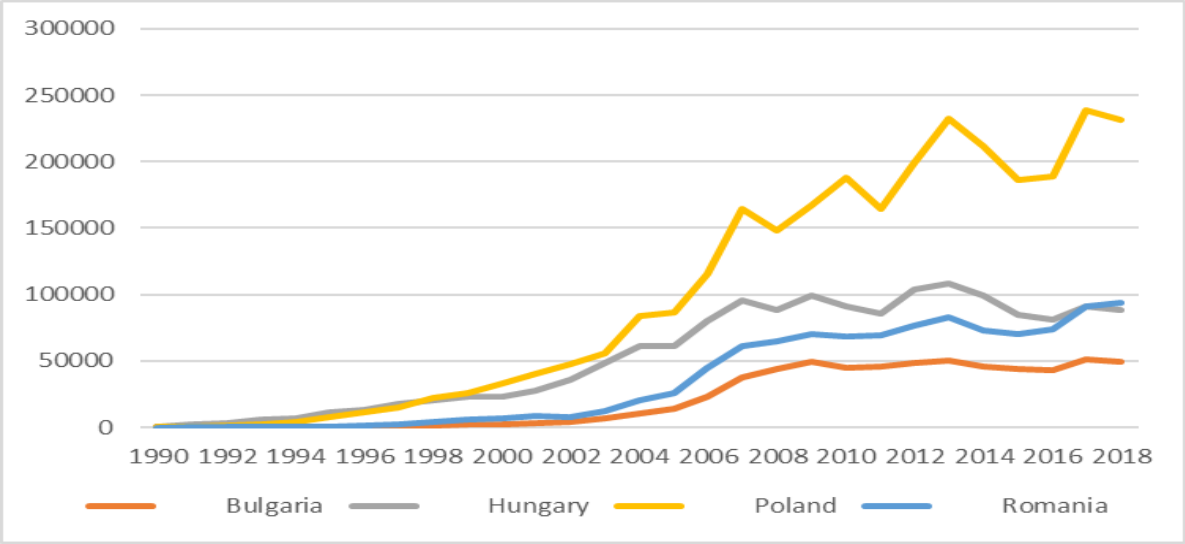

Figure 3 – Inward FDI for Bulgaria, Hungary, Poland and Romania, 1990-2018 (million USD)

Source: authors calculation based on data from UNCTAD

We must acknowledge that Hungary which is half in size compared to Romania attracted much more inward FDI. This can be explained by the fact that Hungary and Poland are closer to the developed countries of Central Europe and benefits of the gravitational effect of FDI.

The outward FDI, presented in Figure 4 is consistent with the IDP as in first stages the outward FDI is almost inexistent as we see until the year 2000. Then as the countries begin to pass to the next stages, we see an increase in outward FDI. Even though the difference between Poland and Hungary on one side and Romania and Bulgaria on the other side is very eloquent, the level of outward FDI for the first two is not enough to pass them in the developed countries of stage 4.

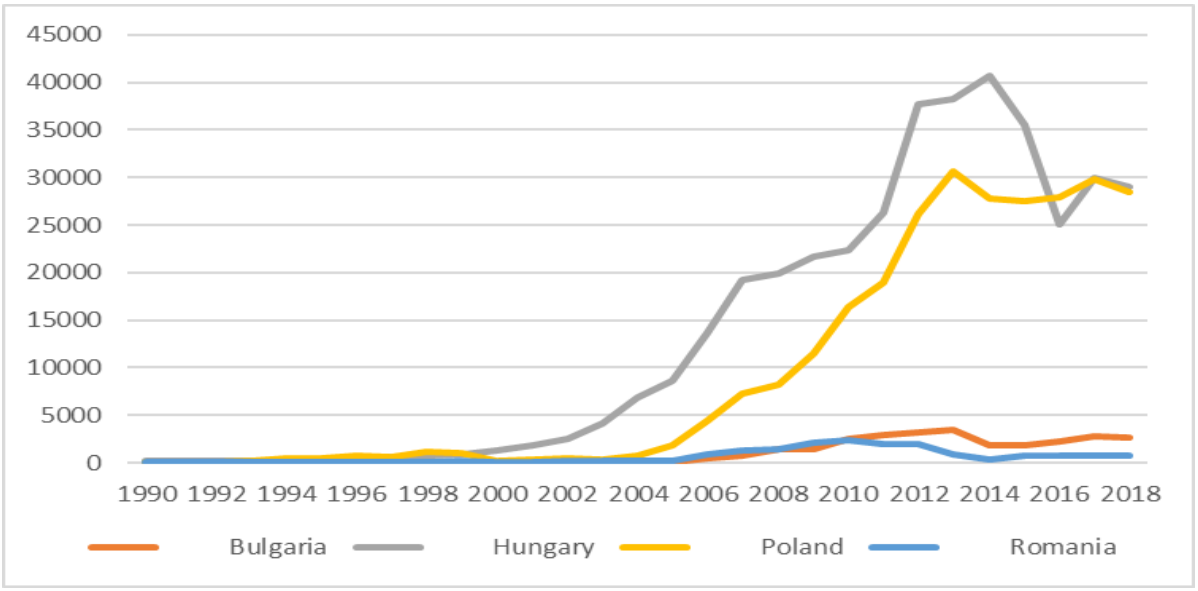

Figure 4 – Outward FDI for Bulgaria, Hungary, Poland and Romania, 1990-2018 (million USD)

Source: authors calculation based on data from UNCTAD

Based on the data collected from UNCTAD we calculated the NOI/capita and with GDP/capita we obtain the results presented in Figure 5. Each dot on the graphic represents a year of the analysed period. We used lines to connect the dots in order to bring up the chronological evolution. The GDP/capita analyse revealed that in 1990, Romania was in stage 1 of development alongside Poland and Bulgaria. The only country from the analysed group that was on stage 2 was Hungary.

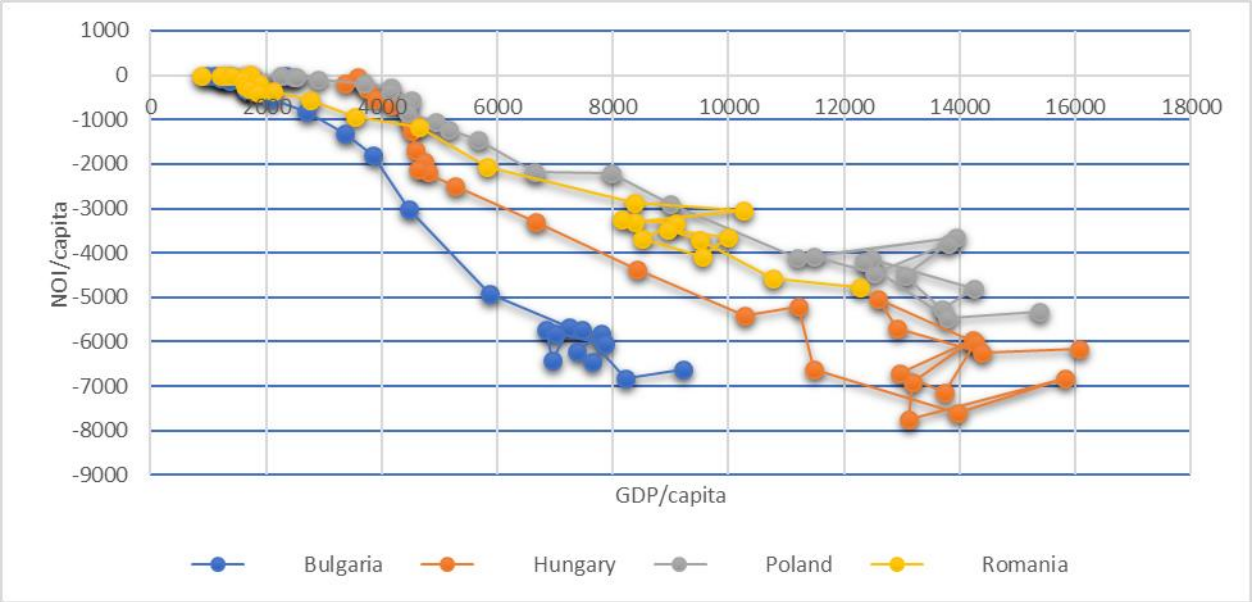

Figure 5 – IDP for Bulgaria, Hungary, Poland and Romania, 1990-2018

Source: authors calculation based on data from UNCTAD

By analysing the data, we observed that in the analysed period the GDP/capita of Romania grew 7.1-fold in 2018 above the level of 1990. All countries grew, but in different degrees, Poland is the in the top with 8.85-fold, followed by Romania, Hungary with 4.48-fold and Bulgaria with 3.93-fold.

Romania advanced to stage 2 in 2003 and for one year in stage 3 in 2008, but the international financial crisis forced it back to stage 2 until 2017 when it advanced to stage 3 again. Bulgaria advanced to stage 2 in the same year 2003 and remained there until the end of the analysis period. Poland advanced to stage 2 in 1993 and to stage 3 in 2007. Hungary advanced to stage 3 in 2004.

Throughout the analysed period all the countries registered negative NOI apart from the first two years for Romania and first year for Bulgaria. These values are explained by the inertia in which the former communism economies had operations abroad and the level of inward FDI was insignificant as potential investors kept away in expectation of better economic environment.

The data and the graphic illustration in Figure 5 provide us with enough proofs that Romania and the other three countries selected for this study follow the IDP theory until 2008 when the international financial crisis disrupted the trust between partners at international level thus affecting the flow of FDI. These problems along with other internal specific problems related to the Balance of Payments and international trade conducted to a disruption of the development measured by GDP/capita. This can be seen in the abnormal evolutions on the graphic from Figure 5 between 2008 and 2016. After this year the evolution seems to regain the trend existing before 2008.

Conclusions

The IDP theory proved along time its usefulness and after the conducted analysis we observed that it is still applicable for our set of data. As stated in a previous work the theory is very good for stages 1 to 3, that is the case in our study, but we must acknowledge the difficulties posed for the stage 4 and 5.

Former communist countries from this study have the same evolution through the IDP as they were underdeveloped or starting their development. This is generated by the transition process from a centralized economy to a free market one. Even though there was a high level of industrial and agricultural development, the lack of managerial skills, legal framework and political will affected each country in different manners.

Becoming members of the European Union did not make domestic firms more willingly to invest abroad in the new market they got access to. Moreover, we saw an intensification of inward FDI as a result of this process.

The international financial crisis had a big impact on the flows of investments and level of development. After this catastrophic event the flows of FDI had to be reshaped and many years passed until the trend was regained.

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